

FY2006

TOOELE ARMY DEPOT  
UTAH  
INSTALLATION ACTION PLAN

June 28, 2005

---

## Statement of Purpose

The purpose of the Installation Action Plan (IAP) is to outline the total multi-year Installation Cleanup Program for an installation. The plan will identify environmental cleanup requirements at each site or area of concern, and propose a comprehensive, installation-wide approach, with associated costs and schedules, to conduct investigations and necessary remedial actions.

In an effort to coordinate planning information between the restoration manager, U.S. Army Environmental Center (USAEC), Tooele Army Depot, executing agencies, regulatory agencies, and the public, an IAP was completed. The IAP is used to track requirements, schedules and tentative budgets for all major Army installation cleanup programs.

All site-specific funding and schedule information has been prepared according to projected overall Army funding levels and is, therefore, subject to change.

**The following agencies contributed to the formulation and completion of this Installation Action Plan at the IAP Workshop held March 24-25, 2005:**

EEI for USAEC  
PBC Army Environmental Center  
Tooele Army Depot  
Utah DEQ/DERR  
Utah DEQ/DSHW  
US Army Corps of Engineers  
US Army Environmental Center

# Table of Contents

<i>Statement of Purpose</i> .....	1
<i>Contributors to the IAP</i> .....	1
<i>Table of Contents</i> .....	2
<i>Acronyms &amp; Abbreviations</i> .....	5
<b>INSTALLATION INFORMATION</b> .....	7
<b>CLEANUP PROGRAM SUMMARY</b> .....	9
<b>INSTALLATION RESTORATION PROGRAM</b>	
<i>IRP Summary</i> .....	12
<i>IRP Contamination Assessment</i> .....	13
<i>ER,A Site Conversion Chart</i> .....	14-
<i>Previous IRP Studies</i> .....	14-3
<b>SITE DESCRIPTIONS</b>	
<i>Operable Unit 8</i> .....	15
<i>TEAD-05, SWMU 6, Old Burn Area</i> .....	16
<i>TEAD-16, SWMU 8, Firing Range</i> .....	17
<i>TEAD-06, SWMU 13, Tire Disposal Site</i> .....	18
<i>TEAD-34, SWMU 22, Building 1303, Washout Pond</i> .....	19
<i>TEAD-28, SWMU 36, Old Burn Staging Area</i> .....	20
<i>Operable Unit 9</i> .....	21
<i>TEAD-12, SWMU 23, Bomb and Shell Reconditioning Bldg</i> .....	22
<i>TEAD-15, SWMU 07, Chemical Range</i> .....	23
<i>TEAD-36, SWMU 40, AED Test Range</i> .....	24
<i>TEAD-27, SWMU 35, Wastewater Spreading Area</i> .....	25
<i>Group A</i> .....	26
<i>TEAD-35, SWMU 20, AED Deactivation Furnace (Bldg 1351)</i> .....	27
<i>TEAD-37, SSWMU 21, Deactivation Furnace (Bldg 1320)</i> .....	28
<i>TEAD-54, SWMU 34, Pesticide Handling &amp; Storage, Bldg 532</i> .....	29
<i>TEAD-58, SWMU 42, Bomb Washout Building</i> .....	30
<i>Known Releases</i> .....	31
<i>TEAD-13, SWMU 2, IWL &amp; Ditches</i> .....	32
<i>TEAD-11, SWMU 3, X-Ray Lagoon (Bldg L-23)</i> .....	35
<i>TEAD-81, SWMU 10, TNT Washout Facility</i> .....	36
<i>TEAD-31, SWMU 11, Laundry and Sewage Ponds</i> .....	37
<i>TEAD-09, SWMU 12/15, North Area Sanitary Landfill</i> .....	38
<i>TEAD-50, SWMU 25, Battery Shop</i> .....	39
<i>Response Complete Sites</i> .....	40

# Table of Contents

## **SCHEDULE**

<i>Past/Projected Milestones .....</i>	<i>41</i>
<i>Schedule Chart .....</i>	<i>42-1</i>

## **COST**

<i>Prior/Current Year Funding .....</i>	<i>43</i>
---	-----------

## **COMMUNITY INVOLVEMENT**

<i>Restoration Advisory Board Status .....</i>	<i>48</i>
--	-----------

## **MILITARY MUNITIONS RESPONSE PROGRAM .....**

<i>MMRP Summary .....</i>	<i>50</i>
<i>MMRP Contamination Assessment .....</i>	<i>51</i>
<i>Previous MMRP Studies.....</i>	<i>51-1</i>

## **MMRP SITE DESCRIPTIONS**

<i>TEAD-001-R-01.....</i>	<i>53</i>
<i>TEAD-002-R-01.....</i>	<i>54</i>
<i>TEAD-003-R-01.....</i>	<i>55</i>
<i>TEAD-004-R-01.....</i>	<i>56</i>
<i>TEAD-005-R-01.....</i>	<i>57</i>

## **MMRP SCHEDULE**

<i>Past/Projected Milestones .....</i>	<i>58</i>
<i>Schedule Chart .....</i>	<i>58-1</i>

## **MMRP COST**

<i>Prior/Current Year Funding .....</i>	<i>59</i>
---	-----------

## **BRAC INSTALLATION RESPONSE PROGRAM .....**

<i>BRAC Summary .....</i>	<i>61</i>
<i>BRAC Contamination Assessment.....</i>	<i>62</i>
<i>Previous BRAC Studies .....</i>	<i>62-1</i>

## **BRAC SITE DESCRIPTIONS**

<i>TEAD-03 Transformer Storage Site .....</i>	<i>64</i>
<i>TEAD-04 Sandblast .....</i>	<i>65</i>
<i>TEAD-07 Transformer Storage .....</i>	<i>66</i>
<i>TEAD-20 DRMO Storage Yard .....</i>	<i>67</i>
<i>TEAD-23 Drum Storage Area.....</i>	<i>68</i>
<i>TEAD-70A Used Oil Dumpster.....</i>	<i>69</i>
<i>TEAD-85 Storm/Indust Piping System.....</i>	<i>70</i>
<i>TEAD-86 Compressor Condensate.....</i>	<i>71</i>

---

Table of Contents

TEAD-87 Chromic Acid/Alodine Beds ..... 72

TEAD-88 Drain Field/Disp Trench ..... 73

TEAD-90 Sandblast Area..... 74

TEAD-93 Gravel Pit ..... 75

TEAD-101 Industrial Area Groundwater Sources ..... 76

Response Complete BRAC Sites ..... 77

**BRAC IRP SCHEDULE**

Past/Projected Milestones ..... 78

Schedule Chart ..... 78-1

**BRAC IRP COST**

Prior/Current Year Funding ..... 79

## Acronyms & Abbreviations

<b>AED</b>	Ammunition and Equipment Directorate
<b>AEDB-R</b>	Army Environmental Database - Restoration
<b>ALF</b>	Abandoned Landfill
<b>AMC</b>	Army Materiel Command
<b>ADRA</b>	Ammunition Demilitarization and Renovation Area
<b>BCT</b>	BRAC Cleanup Team
<b>bgs</b>	below ground surface
<b>bldg</b>	building
<b>BRAC</b>	Base Realignment and Closure Action
<b>CAMU</b>	Corrective Action Management Unit
<b>CC</b>	Compliance-Related Cleanup
<b>CCR</b>	Covenants, Conditions and Restrictions
<b>CERCLA</b>	Comprehensive Environmental Response Compensation and Liability Act
<b>CMI</b>	Corrective Measure Implementation
<b>CMI(C)</b>	Corrective Measure Implementation - Construction
<b>CMI(O)</b>	Corrective Measure Implementation - Operations
<b>CMS</b>	Corrective Measure Study
<b>COC</b>	Contaminate of Concern
<b>CS</b>	Confirmatory Samples
<b>CTC</b>	Cost-To-Complete
<b>CTT</b>	Closed, Transferring and Transferred
<b>cy</b>	cubic yards
<b>DD</b>	Decision Document
<b>DERA</b>	Defense Environmental Restoration Account
<b>DNT</b>	solvent breakdown product
<b>DRMO</b>	Defense Reutilization and Marketing Office
<b>DSERTS</b>	Defense Site Environmental Restoration Tracking System
<b>EECA</b>	Engineered Evaluation/Cost Estimate
<b>EPA</b>	(United States) Environmental Protection Agency
<b>ER,A</b>	Environmental Restoration, Army (formally called DERA)
<b>ESD</b>	Environmental Systems Design
<b>FFA</b>	Federal Facility Agreement
<b>FFSRA</b>	Federal Facility Site Remediation Agreement
<b>FS</b>	Feasibility Study
<b>ft</b>	foot or feet
<b>FY</b>	Fiscal Year
<b>IAP</b>	Installation Action Plan
<b>IC</b>	Institutional Controls
<b>IMA</b>	Installation Management Agency
<b>IRA</b>	Interim Remedial Action
<b>IRP</b>	Installation Restoration Program
<b>ITR</b>	Independent Technical Review
<b>IWL</b>	Industrial Waste Lagoon
<b>lb</b>	pound
<b>LTM</b>	Long Term Management
<b>LUC</b>	Land Use Controls

## Acronyms & Abbreviations

<b>MCL</b>	Maximum Contaminant Level
<b>MMRP</b>	Military Munition Response Program
<b>MNA</b>	Monitored Natural Attenuation
<b>NE</b>	Not Evaluated
<b>NPL</b>	National Priorities List
<b>OB/OD</b>	Open Burning/ Open Detonation
<b>OU</b>	Operational Unit
<b>PA</b>	Preliminary Assessment
<b>PCB</b>	Polychlorinated Biphenyl
<b>PRG</b>	Proposed Remediation Goals
<b>RA</b>	Remedial Action
<b>RA(C)</b>	Remedial Action - Construction
<b>RA(O)</b>	Remedial Action - Operation
<b>RAB</b>	Restoration Advisory Board
<b>RAC</b>	Risk Assessment Code
<b>RC</b>	Response Complete
<b>RCRA</b>	Resource Conservation and Recovery Act
<b>RD</b>	Remedial Design
<b>RDA</b>	Redevelopment Agency
<b>RDX</b>	type of explosive
<b>REM</b>	Removal
<b>RFA</b>	RCRA Facility Assessment
<b>RFI</b>	RCRA Facility Investigation
<b>RI</b>	Remedial Investigation
<b>RIP</b>	Remedy in Place
<b>ROD</b>	Record of Decision
<b>RRSE</b>	Relative Risk Site Evaluation
<b>SARA</b>	Superfund Amendments and Reauthorization
<b>SI</b>	Site Inspection
<b>SVOC</b>	Semi-Volatile Organic Compounds
<b>SWMU</b>	Solid Waste Management Unit
<b>TAPP</b>	Technical Assistance for Public Participation
<b>TCE</b>	Trichloroethylene
<b>TEAD</b>	Tooele Army Depot
<b>TNT</b>	type of explosive
<b>TPH</b>	Total Petroleum Hydrocarbons
<b>TRC</b>	Technical Review Committee
<b>UDEQ</b>	Utah Department of Environmental Quality
<b>USACHPPM</b>	United States Army Center for Health Promotion and Preventive Medicine
<b>USAEC</b>	United States Army Environmental Center
<b>USAEHA</b>	United States Army Environmental Hygiene Agency (replaced by CHPPM)
<b>USATHMA</b>	United States Army Toxic and Hazardous Material Agency (replaced by AEC)
<b>ug/l</b>	micrograms per liter
<b>UXO</b>	Unexploded Ordnance
<b>VOC</b>	Volatile Organic Compounds

***INSTALLATION LOCALE:*** TEAD is located approximately 35 miles southwest of Salt Lake City, in Tooele County, Utah. The installation covers an area of 23,732 acres and is located off of Utah Highway 36, just west of the City of Tooele. The working population is approximately 750 personnel. The City of Grantsville (population 6,000) is situated just beyond the northwest boundary and the City of Tooele (population 27,000) is located immediately northeast of TEAD.

***INSTALLATION MISSION:*** TEAD's mission is to provide for the receipt, storage, issue, maintenance, and demilitarization of conventional ammunition, along with the development, manufacture, and fielding of ammunition peculiar equipment.

***COMMAND ORGANIZATION:***

**Major Command:** United States Army Materiel Command (AMC), Environmental Quality Division

**Major Subordinate Command:** Installation Management Agency, North West Region

**Installation:** Tooele Army Depot, Environmental Office

***REGULATOR PARTICIPATION:***

**Federal:** U.S. Environmental Protection Agency, Region VIII, Federal Facilities Program, Office of Ecosystem Protection and Remediation

**State:** State of Utah, Department of Environmental Quality (UDEQ), Division of Solid and Hazardous Waste and Division of Environmental Response and Remediation

***NPL STATUS:***

NPL Installation, Oct 90

Technical Review Committee, Feb 88

Corrective Action Permit, Jan 91 (Re-issued Feb 2001)

Federal Facility Agreement, Sep 91

Restoration Advisory Board formed in 1994

***PROJECTED DATES FOR CONSTRUCTION COMPLETION AND REMOVAL FROM NPL:***

Construction Complete – 2008

De-list From NPL – 2015+

***RAB/TRC/TAPP STATUS:*** Tooele Army Depot has an active RAB.



### ***PROGRAM SUMMARIES:***

**IRP** Contaminants of Concern: VOCs, Explosives, Metals, PCBs and Petroleum Constituents  
Media of Concern: Soil, Groundwater  
Estimated date for RIP/RC: 2008/indefinite  
Funding to Date: (thru FY04): \$93,413,737  
Current Year (FY05): \$2,940,000  
CTC: \$21,575,000

**MMRP** Contaminants of Concern: UXO  
Media of Concern: Soil  
Estimated date for RIP/RC: 2015+  
Funding to Date: 0  
CTC: \$46,054,000

**BRAC** Tooele Army Depot was on 1993 BRAC list.  
Contaminants of Concern: VOCs, SVOCs, Metals, PCBs, Petroleum Constituents  
Media of Concern: Soil, Ground Water  
Estimated date for RIP/RC: 2006/indefinite  
Funding to Date: (up to FY04): \$Unknown  
Current Year (FY05): \$2,555,000  
CTC: \$3,368,000

---

## Cleanup Program Summary

### ***HISTORIC ACTIVITY:***

Tooele Army Depot (TEAD) is an active U.S. Army IMA, NW Region Facility. TEAD's mission is to provide for the receipt, storage, issue, maintenance, and demilitarization of conventional ammunition. TEAD is one of the major ammunition storage facilities in the United States and occupies 23,732 acres. TEAD's past maintenance missions have included the repair of tactical wheeled vehicles and power generation equipment. Along with these missions, secondary components of these items have been rebuilt, including engine and power trains. In 1993, TEAD's maintenance mission was placed on the base realignment and closure (BRAC) list and the realignment of the maintenance mission was completed in September 1995. The excess BRAC property (1717 acres and over 200 buildings) was transferred to the Tooele City Redevelopment Agency in December 1998 under the Section 334 Early Transfer Authority.

TEAD was established on 7 April 1942 as the Tooele Ordnance Depot. Construction of the facilities, including igloos, magazines, administration buildings, military and civilian housing, roads, hardstands for vehicle storage, and other allied appurtenances, was completed in January 1943. More than 1,625,000 tons of material were shipped and received by TEAD during World War II.

The installation was designated a sub-depot of the Ogden Arsenal in March 1947. In November 1949, TEAD was again redesignated as a full depot and the Ogden Arsenal was designated as a sub-depot under TEAD. In 1955, the Ogden facility was discontinued and its mission transferred to Tooele. On 30 March 1961, the guided missile rebuild, tires and tubes rebuild and calibration of test equipment missions from Benicia Arsenal and Mt. Ranier Ordnance Depot were transferred to TEAD. In June 1970, the maintenance mission responsibilities for topographic equipment, troop support items, construction equipment, power generators and serviceable assets were transferred from Granite City Army Depot. In the mid-1970s, the following four depot activities were assigned to TEAD for administration: Umatilla, Navajo, Fort Wingate and Pueblo.

In 1993, TEAD's maintenance and supply functions were identified for transfer to other installations by the Base Realignment and Closure (BRAC) Commission. With two of the remaining missions being ammunition logistics and the design/fabrication of ammunition equipment, TEAD was designated as a Tier 1 ammunition storage facility in 1995. This made it the primary depot for ammunition operations in the western United States.

The Army is investigating areas of the installation potentially contaminated by these previous activities by implementing its environmental response authority under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Superfund Amendments and Reauthorization Act (SARA) and the Resource Conservation and Recovery Act (RCRA).

A Federal Facility Agreement (FFA) between the Utah Department of Environmental Quality (UDEQ), U.S. Environmental Protection Agency (EPA) Region VIII and the Army was signed in September 1991. Seventeen of the waste sites at TEAD were designated as CERCLA sites in this Agreement. In January 1991, TEAD was issued a RCRA Post Closure and Corrective Action Permit. This Permit basically serves the same purpose as the FFA. The Corrective Action portion of the Permit addresses 9 known releases Solid Waste Management Units (SWMU's) and 31

---

## Cleanup Program Summary

suspected releases SWMUs. Thus, 17 sites are being handled under CERCLA/SARA with the EPA as the lead regulatory agency and 40 are being addressed under RCRA with the State of Utah as the lead agency.

### ***CURRENT ACTIVITY:***

TEAD's mission is to provide for the receipt, storage, issue, maintenance, and demilitarization of conventional ammunition, along with the development, manufacture, and fielding of ammunition peculiar equipment.

TEADs restoration program is being executed under the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). TEADs CERCLA response actions are being conducted in accordance with a Federal Facilities Agreement (FFA), with EPA being the lead agency. The FFA was signed by the Army, EPA, and State of Utah in September 1991. Corrective measures being addressed under RCRA, are being conducted in accordance with a RCRA corrective action permit, with the Utah Department of Environmental Quality, Division of Solid and Hazardous Waste as the lead agency. TEADs RCRA corrective action permit was initially issued in January 1991. The permit was reissued in February 2001.

The primary issue affecting the scope and schedule for TEADs restoration program, is the presence of off-site ground water contamination originating in the former TEAD industrial area. Access to the site is uncertain, possibly delaying required off-site response actions.

### ***PROGRAM PROGRESS:***

**IRP:** Decision Document/Records of Decision have been signed for all sites with the exception of Operable Unit 9 (TEAD-12, TEAD-15, TEAD-27, and TEAD-36). A Record of Decision for Operable Unit 9 is anticipated in FY2006. All remedies and corrective measures are in place with the exception of Operable Unit 9, TEAD-05, TEAD-09, TEAD-58, and TEAD -81. Remedies and corrective measures are anticipated to be completed at these sites in FY05 and FY06. An ongoing alternative measures evaluation is currently in progress at TEAD-13. This evaluation is scheduled to be completed in FY07. The evaluation is intended to develop an alternative management strategy to replace the current pump and treat system.

**MMRP:** The Phase I and Phase II site inventories were completed in FY03. A site investigation of all identified sites is scheduled for FY07.

**BRAC:** Decisions Documents/Records of Decision have been signed for all sites with the exception of TEAD-101. A Decision Document is anticipated for TEAD-101 in FY07. All required remedial actions and corrective measures have been completed with the exception of TEAD-93 and Tead-101. Required corrective measures at TEAD-93 will be completed in FY05. TEAD-101 is currently undergoing a Phase II RCRA Facility Investigation. Corrective measures will be evaluated following this investigation. It is anticipated that a corrective measure will be selected for TEAD-101 in FY07.

# TOOELE ARMY DEPOT

## INSTALLATION RESTORATION PROGRAM

**REDGUATORY STATUS:** NPL (score = 53.95) with off-post groundwater contamination in October 1990. The IRP is being conducted in accordance with a FFA and RCRA Corrective Action Permit.

**AEDB-R SITES:** 33                      **RC SITES:** 14

**AEDB-R SITES RECEIVING FUNDING:** 15

**AEDB-R SITES with LTM ONLY:** 4

**AEDB-R SITE TYPES:**

1 Burn Area	1 Contaminated Building
1 Spill Site Areas	2 Disposal Pit/Dry Well
1 AST	4 Drainage Ditch
1 Firing Range	2 Unexploded Munitions/Ordnance
1 Landfill	2 Storage Area
6 Surface Impound/Lagoon	1 Explosive Ordnance Disposal Area

**CONTAMINANTS OF CONCERN:** VOCs, Explosives, Metals, PCBs and Petroleum Constituents

**MEDIA OF CONCERN:** Soil, Groundwater

**COMPLETED REM/IRA/RA:**

REM-Soil Removal (1976) (Non-DEIRA Funds)	REM-Soil Removal (1980) (Non-DEIRA Funds)
IRA-Capping (1984) (Non-DEIRA Funds)	IRA-Capping (1989) \$4,200,000
REM-Tank Removal (1991) (Non-DEIRA Funds)	REM-Tire Removal (1993) \$160,000
REM-Fence Installation (1994) \$4,000	IRA-UXO Clearance (1994) \$1,298,000
REM-Fence Installation (1995) \$3,800	REM-Fence Installation (1995) \$3,200
IRA-Tank Removal TNT Washout Facility (1996) \$265,330	
IRA- Building 679 Sump Removal (2000) BRAC funds \$12,000	
RA-Soil Removal TEAD-70A,(2000) \$22,000	
IRA-Landfill, relocation of off site debris, (2003) \$38,000	
RA-TEAD-31, Soil Removal (2003) \$466K	RA-TEAD-50, Soil Removal (2003) \$208K
RA-TEAD-54, Soil Removal (2003) \$215K	
RA-TEAD-25, Soil Removal/Cap (2003) \$220K	
RA-TEAD-37, Soil Removal/Cap (2003) \$240K	IRA-TEAD-05, Site Fencing (2003) \$51K
IRA-TEAD-36, Site Fencing (2003) \$132K	

**IDENTIFIED POSSIBLE REM/IRA/RA:**

RA or CMI at TEAD-05, 09, 12, 15, 27, 36, 58, 81

**TOTAL ERA FUNDING:**

Prior Year through 2004:	\$93,413,737
Current Year (FY05)	\$2,940,000
Future Requirements:	\$21,575,000

**DURATION OF IRP:**

Year of IRP Inception:	1979
Year of RA Completion:	2008
Year of IRP Completion:	indefinite

### *Assessment Overview:*

Past operations and related disposal practices at TEAD have resulted in the generation of various types of industrial wastes, some of which have resulted in contamination of the environment. Chlorinated solvents, heavy metals (primarily lead), polychlorinated biphenyls, and explosives are the primary contaminants of concern. Significant plumes of solvent-contaminated ground water have been identified, both on and off the installation. Additionally, UXO are present in substantial quantities at some locations, which can complicate both study and cleanup efforts.

Investigations identified trichloroethylene (TCE) and other chlorinated solvents contamination from the Industrial Waste Lagoon in groundwater in the early 1980s, as well as explosive compounds from the TNT Washout Facility in soil and in groundwater. Following the discovery of solvent contamination at the lagoon, the Utah Department of Environmental Quality issued TEAD a formal consent order to investigate and clean up the site. A ground water pump and treat system has been operating at the site since 1993.

The U.S. Environmental Protection Agency placed the Depot on its National Priorities List in October of 1990. Subsequently, a Federal Facilities Agreement regulating general investigation and cleanup terms and conditions, under the Comprehensive Environmental Response, Compensation and Liabilities Act (CERCLA), was signed with federal and state regulatory agencies in September 1991. TEAD was issued a RCRA Corrective Actions permit, addressing similar issues, in January of that year. This permit expired and was reissued in February 2001.

The TEAD restoration program underwent an Independent Technical Review (ITR) in September 2000. Sites evaluated under this review included SWMU 10, TNT Washout Ponds, SWMUs 12/15, Sanitary Landfill, and Groundwater Investigation efforts associated with SWMUs 2 and 58. The report of findings from this review was published and discussions concerning the appropriateness of proposed remedies at SWMUs 10, and 12/15 were questioned. In addition, concerns were raised concerning the on-going operations of the ground water remediation system, as well as the concepts presented for further delineation and remediation of source areas. Based on the recommendations coming out of the ITR, additional site characterization was completed, alternatives were reevaluated, and cost estimates revised.

The Depot was placed on the BRAC list in 1993. As a result, of the 67 DSERTS sites at TEAD, 33 are being addressed under the Army's Installation Restoration Program (IRP) for active facilities, and the others are under the BRAC environmental program. Likewise both IRP and BRAC sites are further split between regulation under CERCLA and RCRA, as shown in the Site List.

### **Site Organization and Project Phase Status**

The IRP at TEAD (a total of 57 Solid Waste Management Units or SWMUs) is divided into two programs, one operated under CERCLA and the other under RCRA corrective action. The 17 CERCLA SWMUs are listed in the Federal Facilities Agreement, and are divided into seven operable units, numbered 4-10 (numbers 1-3 are used by EPA to track TEADs RCRA Corrective Action sites). All required response actions have been completed at OUs 5, 6, 7 and 10. The ROD for OU4 was signed January 2003 and the ROD for OU 8 continues to be staffed for signature. The remaining operable unit, OU 9, contains 4 SWMUs which are currently in the Feasibility Study/Proposed Plan/Record of Decision phase.

---

## IRP Contamination Assessment

There are 40 SWMUs addressed in the Corrective Action Permit. These SWMUs are further divided into two primary categories by the permit - known releases (nine SWMUs), and suspected releases (31 SWMUs).

The RFI for the Known Release SWMUs was approved by the regulators in 1997. The CMS has been approved for all of the Known Release SWMUs except TEAD-09. The final CMS report for TEAD-09 is under review.

Of the 31 Suspected Release SWMUs, four were approved as requiring no further action after the Phase I RFI. The 27 remaining SWMUs are categorized into four groupings (Groups A, B, C, and TEAD-101) for management and scheduling purposes. There are eight SWMUs in Group A for which the CMS was approved. There are nine SWMUs in Group B, four of which have been approved for no further action after the Phase II RFI in 1997; the remaining five are RC. There are also nine SWMUs in Group C, one of which received no further action in 1997. The CMS for the other eight SWMUs in this group has been approved and the corrective measures will be completed in May 2003. Lastly, TEAD-101, Industrial Area Groundwater Sources is in the Phase II RFI phase.

### *Cleanup Exit Strategy:*

Continue remedial actions and long term monitoring as needed.



# IRP Conversions

RC	BRAC	ER,A
----	------	------

AEDB-R #	SWMU #	Group	Regulation	Program	Title	RC
TEAD-01	1	Group A	RCRA	ER,A	OB/OD Area	X
TEAD-03	31	OU 4	CERCLA	BRAC	Transformer Storage Site	
TEAD-04	4	Group B	RCRA	BRAC	Sandblast Area	
TEAD-05	6	OU 8	CERCLA	ER,A	Old Burn Area	
TEAD-06	13	OU 8	CERCLA	ER,A	Tire Disposal Site	
TEAD-07	17	OU 5	CERCLA	BRAC	Transformer Storage	
TEAD-08	18	OU 6	CERCLA	BRAC	RAD Storage (Bldg S-659)	X
TEAD-09	12 & 15	Known Releases	RCRA	ER,A	North Area Sanitary Landfill	
TEAD-10	5	OU 7	CERCLA	ER,A	PCB Spill Site (Pole 184)	X
TEAD-101	58	None	RCRA	BRAC	Indust Area Groundwater Sources	
TEAD-11	3	Known Releases	RCRA	ER,A	X-Ray Lagoon (Bldg L-23)	
TEAD-12	23	OU 9	CERCLA	ER,A	Bomb & Shell Recond Bldg	
TEAD-13	2	Known Releases	RCRA	ER,A	IWL & Ditches	
TEAD-14	24	Known Releases	RCRA	ER,A	Battery Pit	X
TEAD-15	7	OU 9	CERCLA	ER,A	Chemical Range	
TEAD-16	8	OU 8	CERCLA	ER,A	Firing Range	
TEAD-18	19	Group B	RCRA	ER,A	AED Demil Facility (Bldg 1370-80)	X
TEAD-19	9	OU 6	CERCLA	BRAC	RAD Waste Storage	X
TEAD-20	26	Group B	RCRA	BRAC	DRMO Storage Yard	
TEAD-21	27	Group A	RCRA	ER,A	RCRA Container Storage	X
TEAD-22	28	Group B	RCRA	BRAC	90 Day Storage Area	X
TEAD-23	29	Group B	RCRA	BRAC	Drum Storage Area	
TEAD-24	30	Known Releases	RCRA	BRAC	Old IWL (BRAC Parcel)	X
TEAD-24A	30	Known Releases	RCRA	ER,A	Old IWL (Active Parcel)	X
TEAD-25	32	UO 4	CERCLA	BRAC	PCB Spill Site	X
TEAD-26	33	OU 5	CERCLA	BRAC	PCB Storage (Bldg 659)	X
TEAD-27	35	OU 9	CERCLA	ER,A	Wastewater Spreading Area	
TEAD-28	36	OU 8	CERCLA	ER,A	Old Burn Staging Area	
TEAD-29	37	Group A	RCRA	ER,A	Cont Waste Proc (Bldg 1325)	X
TEAD-30	38	Group B	RCRA	BRAC	IWTP	X
TEAD-31	11	Known Releases	RCRA	ER,A	Laundry Pond	
TEAD-32	39	None	RCRA	BRAC	Solvent Recov Facility	X
TEAD-33	16	None	None	ER,A	Septic Tanks	X
TEAD-34	22	OU 8	CERCLA	ER,A	Bldg 1303 Washout Pond	
TEAD-35	20	Group A	RCRA	ER,A	Deact Furnace (Bldg 1351)	
TEAD-36	40	OU 9	CERCLA	ER,A	AED Test Range	
TEAD-37	21	Group A	RCRA	ER,A	Deact Furnace (Bldg 1320)	
TEAD-38	41	UO 10	CERCLA	ER,A	Box Elder Wash Drum Site	X
TEAD-50	25	Known Releases	RCRA	ER,A	Battery Recharge Ops (Bldg 1252)	
TEAD-54	34	Group A	RCRA	ER,A	Pesticide Mixing (Bldg 532)	
TEAD-58	42	Group A	RCRA	ER,A	Bldg 539 Bomb Washout	
TEAD-67	43	None	RCRA	ER,A	Cont Storage Areas for P999	X
TEAD-69	47	Group B	RCRA	BRAC	Boiler Blowdown	X
TEAD-70	46	Group B	RCRA	ER,A	Used Oil Dumpsters	X
TEAD-70A	46	Group B	RCRA	BRAC	Used Oil Dumpsters	
TEAD-80	14	Group B	RCRA	ER,A	Sewage Lagoons	X
TEAD-81	10	Known Releases	RCRA	ER,A	TNT Washout Ponds	
TEAD-82	44	None	RCRA	BRAC	TCE Storage Tank	X



## IRP Conversions

RC	BRAC	ER,A
----	------	------

AEDB-R #	SWMU #	Group	Regulation	Program	Title	RC
TEAD-83	45	Group A	RCRA	ER,A	Stormwater Discharge	X
TEAD-84	48	Group A	RCRA	ER,A	Old Dispensary	X
TEAD-85	49	Group C	RCRA	BRAC	Storm/ Indust Piping System	
TEAD-86	50	Group C	RCRA	BRAC	Compressor Condensate	
TEAD-87	51	Group C	RCRA	BRAC	Chromic Acid/ Alodine Beds	
TEAD-88	52	Group C	RCRA	BRAC	Drain Field/ Disp Trench	
TEAD-89	53	Group C	RCRA	BRAC	PCB Storage/ Spill Sites	X
TEAD-90	54	Group C	RCRA	BRAC	Sandblast Areas	
TEAD-91	55	Group C	RCRA	BRAC	Battery Shop, Bldg 618	X
TEAD-93	56	Group C	RCRA	BRAC	Gravel Pit	
TEAD-94	57	Group C	RCRA	BRAC	Skeet Range	X
TEAD-95	NA	None	Compliance	BRAC	UST Sites	X
TEAD-96	NA	None	Compliance	BRAC	Building 611 Firing Range	X
TEAD-97	NA	None	Compliance	BRAC	Building 659 Transformer Storage	X

## IRP Previous Studies

Title	Author	Date
Environmental Assessment of Tooele Army Depot, Report No. 141	USATHAMA	Dec-79
Installation Environmental Assessment	Inland Pacific Eng. Co.	Jun-82
Investigation at the Open Burning/Open Detonation Areas	AEHA	1982-1985
Exploratory Environmental Contamination Assessment Report	ERTEC	1982
Environmental Photographic Interpretation Center Report	USEPA and EPIC	1982
Analysis of Existing Facilities/Environmental Assessment Report	TEAD Facilities Eng.	May-83
Monitoring Activity and Waste Disposal Review and Evaluation	CH2M Hill	Jan-85
A Study of Environmental Balance	Department of the Army	Mar-85
Performance of Remedial Response Activities at Uncontrolled Hazardous Waste Sites - Final Plan	CDM	Mar-85
Interim Groundwater Quality Assessment Report	Woodward-Clyde	1985
Analytical/Environmental Assessment Report	TEAD Facilities Engineering	Nov-85
Industrial Wastewater Lagoon and Ditches - Groundwater Quality Assessment Report, Corrective Action Plan, and Record of Decision	James M. Montgomery (JMM)	Jan-86
Engineering Report for Closure of the Industrial Wastewater Lagoon	JMM	Mar-86
Environmental Photographic Interpretation Center Report Addendum	USEPA and EPIC	Jul-86
Draft Interim RCRA Facility Assessment	NUS Corporation	Aug-87
Groundwater Quality Assessment Engineering Report	JMM	May-88
Preliminary Assessment/Site Investigation Report	EA Engineering, Science and Technology	December-88
Final Remedial Investigation Report Groundwater Quality Assessment	ESE	Feb-91
RCRA RFI Phase I Summary Report for Known Release Units	ASI	Nov-91
Final Preliminary Baseline Risk Assessment for North Area	SEC Donohue	Apr-92
Memorandum of Remedial Action Objectives	RUST	Jun-93
Assembled Alternatives Screening Memorandum	RUST E&I	Mar-93
Phase I RCRA Facility Investigation Report, Suspected Releases SWMUs	Montgomery Watson	Dec-93
Memorandum on Detailed Analysis of Alternatives	RUST E&I	Oct-93
Remedial Investigation Report for Operable Units 4-10	RUST E&I	Feb-94
Feasibility Study Report for Operable Units 5, 6, 7, 10	RUST E&I	Mar-94
Record of Decision for Operable Units 5, 6, 7 and 10	RUST E&I	Sep-94
Phase II RFI Report for Known Releases SWMUs	RUST E&I	Apr-96
Phase II RFI Report for Group A SWMUs.	Montgomery Watson	Sep-96
Phase 2 RI Report for Operable Units 4, 8 and 9	RUST E&I	Nov-96
Remedial Design for Two CERCLA Sites in TEAD-North, Volume 1 & 2	Kleinfelder	1-Nov-95
Remedial Action Workplan for CERCLA Sites	Davey	1-Oct-95
Groundwater Monitoring Report	Geomatrix	Spring 1996
Technical Evaluation of Groundwater Conditions Beneath Northeast Boundary	Kleinfelder	Mar-96
Groundwater Sampling & Analysis	Metcalf & Eddy	Dec-96

## IRP Previous Studies

Title	Author	Date
Remedial Design Support Field Activities Report for Box Elder Wash Drum Site in TEAD-North	Kleinfelder	Feb-96
Technical Memorandum, Target Soil Clean-up Goals, Box Elder Drum Wash Site (OU 10/SWMU 41), TEAD-North	Kleinfelder	Jan-96
(OU 10/SWMU 41), TEAD-North	USACE	May-96
Known Releases CMS Work Plan	Dames and Moore	Jul-96
Group A Suspected Releases CMS Work Plan	Dames and Moore	Jun-96
Remedial Investigation Addendum Report for OUs 4, 8, and 9	RUST E&I	Feb-97
Feasibility Study Report for OUs 4,8, and 9	Dames and Moore	Jan-98
Proposed Plan for OUs 4, 8, and 9	Dames and Moore	Feb-98
Technical Report for Soil Composting Treatability Study, TNT Washout Facility (SWMU 10)	Dames and Moore	Feb-98
Additional Field Investigation for Known Releases SWMUs	Dames and Moore	July-98
Groundwater Treatment Plant Optimization Study	Kleinfelder	Aug-98
Groundwater Treatment System Optimization Study	EPA	Feb-99
Groundwater Flow and Solute Transport Model	USACE	Feb-99
Group A Corrective Measures Study Report,	URS Dames & Moore	Apr-01
Group A Decision Document	URS Dames & Moore	Apr-01
CMS and Decision Document for SWMUs 3,11,25,30	URS Dames & Moore	Dec 01
CMS for SWMU-10	URS Dames & Moore	Jul 03
CMS for SWMUs 12-15	URS Dames & Moore	Mar 03
Decision Document for SWMU-10	URS Dames & Moore	Oct 03
Remedial Design Plan for IC's at OU-8	TEAD	Dec 03
Record of Decision for OU-8	URS Dames & Moore	Dec 03
Decision Document for SWMUs 12-15	URS Dames & Moore	Jan 04
Final Interim Action Report, SWMU 40	USACE	May 04
Final Interim Action Report, SWMU 6	USACE	May 04
1st Five Year Review	TEAD	Sept 02
Remedial Design Plan for IC's at OU 7	TEAD	Feb 05
SWMU 11 Corrective Measures Construction Completion Report	Northwind	May 04
SWMU 20 Corrective Measures Construction Completion Report	AEEC	Jul 04
SWMU 21 Corrective Measures Construction Completion Report	AEEC	Jul 04
SWMU 34 Corrective Measures Construction Completion Report	AEEC	Jul 04
SWMU 03 Site Closure Report	Kleinfelder	Sept 04

TOOELE ARMY DEPOT  
INSTALLATION RESTORATION  
PROGRAM  
SITE DESCRIPTIONS  
OU-8

# TEAD-05, SWMU-06 OLD BURN AREA

## SITE DESCRIPTION

The Old Burn Area was used for testing of munitions and for burning boxes and wooden crates on the ground surface and in shallow trenches. These activities were discontinued in the 1970s. The trenches still contain metal debris and spent or destroyed munitions. The trenches have been filled, graded and re-vegetated.

Low levels of metals and explosives were detected in soil samples. Lead was located in a small area near one of the berms and hot spots were detected to 5 ft bgs. 2,4-DNT was located within a manmade drainage ditch that collects runoff from the site. Both were present at concentrations above the industrial worker PRGs. Elevated cancer risks and hazards were identified for the hypothetical future resident and the future construction worker. No significant ecological risks were identified.

An Interim Action was completed in 2003 consisting of site fencing to limit exposure to ordnance.

A ROD was signed by the Army, EPA and State of Utah in 2004.

## CLEANUP STRATEGY

The remedy selected in the 2004 ROD was excavation and solidification/stabilization of lead-contaminated soil (~1,175cy). Solidified/stabilized soil was to be deposited in and managed in a CAMU located within the boundaries of SWMU 12/15. The remedy also included the excavation and off-site disposal of explosive contaminated soil. Remedial action at the site was initiated in 2004. During remediation of the site, it was determined that the lead contaminated soil contained an excessive amount of metal debris, which made it impractical to stabilize. Explosive contaminated soils were excavated and disposed of at an off-site treatment, storage, and disposal facility. An EECA will be required to evaluate alternative remedial actions for dealing with the lead contaminated soil and metal debris. The EECA will be initiated in 2005. An ESD will be completed to document the change in remediation.

It is assumed that macro-encapsulation will be used to treat the lead-contaminated soil. LTM will follow consisting of annual land use control and fence inspections and 5-year reviews.

## STATUS

**RRSE RATING:** High  
**REDULATION:** CERCLA  
**CONTAMINANTS:**  
Explosives, Metals  
**MEDIA OF CONCERN:** Soil

PHASES	Start	End
PA .....	197912 .....	198812
SI .....	197912 .....	198812
RI/FS .....	198708 .....	200002
RD .....	200102 .....	200206
<b>RA .....</b>	<b>200403 .....</b>	<b>200809</b>
LTM .....	200809 .....	203508
<b>RC expected: 200809</b>		

# TEAD-16, SWMU-08 FIRING RANGE

## SITE DESCRIPTION

The Small Arms Firing Range was used for weapons training by the National Guard, Army Reserve, Navy and TEAD military personnel. The range contains 20 firing stations, with targets located at 25, 50, 100 and 300 meters. Bermed areas just in front and behind the targets were used to stop the fired rounds.

Several metals were identified in the soil collected from the berms, although lead was the only COC.

Elevated risks and hazards were identified for the hypothetical future resident. The ecological risk identified adverse effects on plants and animals from the lead in the soil. A ROD was signed by the Army, EPA and State of Utah in 2004.

The selected remedy is excavation and solidification/stabilization of lead-contaminated soil (2,800cy). Solidified/stabilized soil will be deposited in and managed in a CAMU located within the boundaries of SWMU 12/15. Excavation, stabilization, and placement of the soil in the CAMU was completed in December 2004.

## CLEANUP STRATEGY

Institutional controls (ICs) in the form of land use restrictions are included as part of the remedy to prevent future residential use. A Remedial Design (RD) Plan has been prepared for implementation and monitoring of ICs. The RD plan requires annual IC inspections as well as five year reviews.

Long Term Management (LTM) will be required at the site. LTM consists of annual IC inspections and five year reviews.

## STATUS

**RRSE RATING:** High  
**REGULATION:** CERCLA  
**CONTAMINANTS:** Lead  
**MEDIA OF CONCERN:** Soil

PHASES	Start	End
PA .....	197912	198812
SI .....	197912	198812
RI/FS .....	198708	200002
RD .....	200101	200206
RA .....	200403	200412
<b>LTM .....</b>	<b>200412</b>	<b>203508</b>

**RC: 200412**

# TEAD-06, SWMU-13 TIRE DISPOSAL SITE

## SITE DESCRIPTION

The Tire Disposal Area is an 11-acre pit located in the southern portion of TEAD. It was used for the disposal of vehicle tires from 1965 to 1993. The tires were removed in 1993.

Chloromethane was the only chemical detected in the surface soil. However it was present at levels below the Depot worker PRG.

A ROD was signed by the Army, EPA and State of Utah in 2004.

## CLEANUP STRATEGY

The selected remedy is Institutional Controls (ICs) in the form of land use restrictions to prevent residential use. A Remedial Design (RD) Plan has been prepared for implementation and monitoring of ICs. The RD plan requires annual IC inspections as well as five year reviews.

LTM will be required at the site. LTM consists of annual IC inspections and five year reviews.

## STATUS

**RRSE RATING:** Low

**REGULATION:** CERCLA

**CONTAMINANTS:** Chloromethane

**MEDIA OF CONCERN:** Soil

<b>PHASES</b>	<b>Start</b>	<b>End</b>
PA .....	197912 .....	198812
SI .....	197912 .....	198812
RI/FS .....	198708 .....	200002
IRA .....	199307 .....	199309
<b>LTM .....</b>	<b>200002 .....</b>	<b>203108</b>
<b>RC: 200002</b>		

# TEAD-34, SWMU-22 BUILDING 1303 WASHOUT POND

## SITE DESCRIPTION

The Building 1303 Washout Pond is a shallow depression located in the southwestern portion on TEAD. This site received washwater from Bldg 1303, where high-explosive bombs and projectiles were dismantled and shell casings were washed for reuse or disposal. The washwater drained from the building into an unlined ditch and flowed to the ponding area.

Metals and explosives were detected in the soil of the ditch and pond. The explosives 2, 4, 6-TNT and RDX were located in one hot spot.

In February 1998, an Interim Action was conducted consisting of the excavation of explosive-stained soil from the washout pond.

A risk assessment, conducted after the removal, showed slightly elevated cancer risks, and hazards were detected for the hypothetical future resident.

A ROD was signed by the Army, EPA and State of Utah in 2004.

## CLEANUP STRATEGY

The selected remedy is Institutional Controls (ICs) in the form of land use restrictions to prevent residential use. A Remedial Design (RD) Plan has been prepared for implementation and monitoring of ICs. The RD plan requires annual IC inspections as well as five year reviews.

LTM will be required at the site. LTM consists of annual IC inspections and five year reviews.

## STATUS

**RRSE RATING:** Medium

**REGULATION:** CERCLA

**CONTAMINANTS:**

Explosives, Metals

**MEDIA OF CONCERN:** Soil

PHASES	Start	End
PA .....	197912 .....	198812
SI .....	197912 .....	198812
RI/FS .....	198708 .....	200002
IRA .....	199707 .....	199710
LTM .....	200002 .....	203508

**RC: 200002**



# TEAD-28, SWMU-36 OLD BURN STAGING AREA

## SITE DESCRIPTION

The Old Burn Staging Area is a small pit located immediately north of the Old Burn Area (SWMU 6). The area was used to temporarily store material on its way to the Old Burn Area (TEAD-05).

Elevated concentrations of metals were detected in the surface soil. Slightly elevated residential risks were identified.

A ROD was signed by the Army, EPA and State of Utah in 2004.

## CLEANUP STRATEGY

The selected remedy is Institutional Controls (ICs) in the form of land use restrictions to prevent residential use. A Remedial Design (RD) Plan has been prepared for implementation and monitoring of ICs. The RD plan requires annual IC inspections as well as five year reviews.

LTM will be required at the site. LTM consists of annual IC inspections and five year reviews.

## STATUS

**RRSE RATING:** High  
**REGULATION:** CERCLA  
**CONTAMINANTS:** Metals  
**MEDIA OF CONCERN:** Soil

PHASES	Start	End
PA .....	197912	198812
SI.....	197912	198812
RI/FS.....	198708	200002
<b>LTM.....</b>	<b>200002</b>	<b>203508</b>
<b>RC: 200002</b>		

TOOELE ARMY DEPOT  
INSTALLATION RESTORATION  
PROGRAM  
SITE DESCRIPTIONS  
OU-9

# TEAD-12, SWMU 23 BOMB SHELL RECON BUILDING

## SITE DESCRIPTION

Operations in Building 1345 began in the late 1950s and have consisted of external work on large munitions, primarily sandblasting and painting. Wastewater, which currently is comprised of boiler blowdown water, has flowed from the facility into two ditches.

The Remedial Investigation identified elevated levels of SVOCs that pose a residential risk as well as industrial worker risk.

The Final Feasibility Study, Proposed Plan, and Record of Decision are anticipated in fall 2005.

## CLEANUP STRATEGY

The anticipated remedial action will be excavation and disposal of contaminated soil along with institutional controls in the form of land use controls to prevent residential use. A remedial design plan for implementation and monitoring of ICs will be required.

LTM will be required at the site. LTM will consist of annual IC inspections and five-year reviews.

## STATUS

**RRSE RATING:** Medium  
**REGULATION:** CERCLA  
**CONTAMINANTS:** SVOCs  
**MEDIA OF CONCERN:**  
Soil, Surface Water

<b>PHASES</b>	<b>Start</b>	<b>End</b>
PA .....	197912 .....	198812
SI .....	197912 .....	198812
RI/FS .....	198708 .....	200109
RD .....	200109 .....	200208
<b>RA .....</b>	<b>200208 .....</b>	<b>200512</b>
LTM .....	200601 .....	202512
<b>RC expected: 200512</b>		

# TEAD-15, SWMU 07 CHEMICAL RANGE

## SITE DESCRIPTION

The Chemical Range which covers 550 acres, runs east and west along the southern installation boundary. A small wedge (9 acres) of this former range is off post and has been identified as TEAD-003-R-01 under the MMRP.

At the eastern point of the firing range is the firing point, with the bullet stop located about 4,860 feet to the west. A building foundation and several debris disposal trenches are all that remain. Chemical and pyrotechnic type munitions, excluding chemical agent fill munitions, were tested and disposed of at this site. Munition testing and disposal included such items as flares, smoke grenades, smoke pots, incendiary devices and riot control gases.

In 1997, an Interim Action was conducted consisting of debris and explosive residue removal from one of the exposed trenches.

The Remedial Investigation at this site identified elevated metals concentrations in surface soils that pose residential and construction worker risks.

The Final Feasibility Study, Proposed Plan, and Record of Decision are anticipated in fall 2005.

## CLEANUP STRATEGY

Institutional controls (ICs) in the form of land use restrictions are anticipated to be the final remedy at the site. A remedial design plan for implementation and monitoring of ICs will be required. LTM will be required at the site. LTM will consist of annual IC inspections and five year reviews.

## STATUS

**RRSE RATING:** Medium  
**REGULATION:** CERCLA  
**CONTAMINANTS:** Metals, UXO  
**MEDIA OF CONCERN:** Soil

PHASES	Start	End
PA .....	197912 .....	198812
SI .....	197912 .....	198812
RI/FS .....	198708 .....	200209
IRA .....	199707 .....	199712
LTM .....	200209 .....	203508

**RC: 200209**

# TEAD-36, SWMU 40 AED TEST RANGE

## SITE DESCRIPTION

The AED Test Range is located in the northwestern portion of TEAD, and has been used for the testing of munitions, bombs and rocket motors. This site consists of several revetments, a drop tower and a deactivation furnace (only the foundation remains). The deactivation furnace was used to test conveyor spacing in relationship to the design of such systems. Fragments of propellant, UXO and spent munitions can be found on the surface throughout the site.

Contaminants of concern that were identified during the Remedial Investigation consist of metals, RDX and 2,4-dinitrotoluene. These contaminants trigger a residential risk.

The site was fenced in Nov 2003.

The Final Feasibility Study, Proposed Plan, and Record of Decision are anticipated in fall 2005.

## CLEANUP STRATEGY

Institutional controls (ICs) in the form of land use restrictions are anticipated to be the final remedy at the site. A remedial design plan for implementation and monitoring of ICs will be required. LTM will be required at the site. LTM will consist of annual IC inspections and five year reviews.

## STATUS

**RRSE RATING:** High  
**REGULATION:** CERCLA  
**CONTAMINANTS:**  
Explosives, Metals, UXO  
**MEDIA OF CONCERN:** Soil

PHASES	Start	End
PA .....	197912 .....	198812
SI .....	197912 .....	198812
RI/FS .....	198708 .....	200311
IRA .....	200309 .....	200311
LTM .....	200311 .....	203108

**RC: 200311**

# TEAD-27, SWMU 35 WASTEWATER SPREADING AREA

## SITE DESCRIPTION

At the Wastewater Spreading Area, runoff and wastewater from a former housing area, now part of the TEAD horse stable complex, was discharged through two culverts into two unlined ditches. The ditches discharged to a relatively flat spreading area.

Levels of pesticides above industrial worker PRGs were identified as COCs in the soil. These pesticides do not appear to have adversely affected groundwater. The human health Risk Assessment identified no elevated cancer risk or hazards for the Depot worker. Elevated risk has been identified for the possible future resident. There is a potential ecological risk to songbirds due to the consumption of food from this area.

## STATUS

**RRSE RATING:** Medium  
**REGULATION:** CERCLA  
**CONTAMINANTS:** Pesticides  
**MEDIA OF CONCERN:** Soil

<b>PHASES</b>	<b>Start</b>	<b>End</b>
PA .....	197912 .....	198812
SI .....	197912 .....	198812
RI/FS .....	198708 .....	200002
<b>LTM .....</b>	<b>200002 .....</b>	<b>203508</b>

**RC: 200002**

The Final Feasibility Study, Proposed Plan, and Record of Decision are anticipated in fall 2005.

## CLEANUP STRATEGY

Institutional controls (ICs) in the form of land use restrictions are anticipated to be the final remedy at the site. A remedial design plan for implementation and monitoring of ICs will be required. LTM will be required at the site. LTM will consist of annual IC inspections and five year reviews.

TOOELE ARMY DEPOT  
INSTALLATION RESTORATION  
PROGRAM  
SITE DESCRIPTIONS  
GROUP - A

# TEAD-35, SWMU 20

## AED DEACTIVATION FURNACE (BLDG 1351)

### SITE DESCRIPTION

This site is located on an approximately 200 by 225 ft asphalt pad, along the road between the AED Demil Facility and the Bomb Shell Recon Bldg. A small area of the western corner of the pad, which was reportedly once used to store drummed residue, is referred to as the former hazardous waste holding area. Building 1351 has been active since approximately 1970; it includes a deactivation furnace, a flash furnace (installed in 1976) and a large air pollution control system (installed in 1976). Building 1352 is a small storage building.

The contamination resulting from approximately 6 years of use without the air pollution controls is eligible for ER,A funds. Low levels of several metals were detected in the soils that pose a risk to future residents.

Ash from current use is drummed and disposed of off-site due to the presence of Cd, Cr and Pb.

Corrective measures were implemented in 2003 and consisted of construction of an asphalt cap, along with Institutional Controls (ICs) in the form of land use restrictions. Land use restrictions have been applied to the site to prevent future residential use of development of the site.

Cleanup costs associated with closure with active portions of these sites will be addressed under the RCRA Part B Closure Plan and funded separately.

### CLEANUP STRATEGY

Semi-annual inspections and maintenance of the asphalt cap will continue. LTM will be required at the site. LTM consists of semi-annual IC inspections.

### STATUS

**RRSE RATING:** High  
**REGULATION:** RCRA  
**CONTAMINANTS:** Metals  
**MEDIA OF CONCERN:** Soil

PHASES	Start	End
RFA.....	197912	198812
CS.....	197912	198812
RFI/CMS.....	198812	200108
DES.....	200108	200208
CMI.....	200305	200311
<b>CMI(O) .....</b>	<b>200306</b>	<b>200809</b>
LTM.....	200810	203508

**RC expected: 200809**



# TEAD-37, SWMU 21

## DEACTIVATION FURNACE (BLDG 1320)

### SITE DESCRIPTION

This site occupies 0.7-acres in the southwestern portion of TEAD. The site is an ammo demil production facility (Bldg 1320) that was constructed about 1955 and is currently under a RCRA Part B permit.

Bldg 1320 contains a rotary-kiln deactivation furnace that is used to deactivate small arms ammo, primers and fuses. Air pollution control equipment was installed around 1975 to treat emissions from the furnace.

The contamination resulting from the approximately 20 years of use without the air pollution controls is eligible for ER,A funds. The RFI detected metals, explosives, dioxins and furans that pose an unacceptable risk to the future resident, worker and ecology. A small amount of TNT-contaminated soil was removed from the Former Drum Staging Area.

Incinerator residue (ash and metal debris) is collected at the south end of the furnace and loaded into 55-gallon drums for temporary storage. Open staging areas for support equipment and drums are located around the outside of the building. These areas are paved with asphalt or covered with gravelly soil.

Corrective measures were implemented in 2003 and consisted of construction of an asphalt cap, along with Institutional Controls (ICs) in the form of land use restrictions. Land use restrictions have been applied to the site to prevent future residential use or development of the site.

Cleanup costs associated with closure with active portions of these sites will be addressed under the RCRA Part B Closure Plan and funded separately.

### CLEANUP STRATEGY

Semi-annual inspections and maintenance of the asphalt cap will continue. LTM will be required at the site. LTM consists of semi-annual IC inspections.

### STATUS

**RRSE RATING:** High

**REGULATION:** RCRA

**CONTAMINANTS:**

Explosives, Metals, Dioxins, Furans

**MEDIA OF CONCERN:** Soil

PHASES	Start	End
RFA.....	197912	198812
CS.....	197912	198812
RFI/CMS.....	198812	200108
CMD .....	200108	200208
CMI.....	200305	200311
<b>CMI(O) .....</b>	<b>200311</b>	<b>200809</b>
LTM.....	200810	203508
<b>RC expected: 200809</b>		

# TEAD-54, SWMU 34 PESTICIDE MIXING (HANDLING & STORAGE) BUILDING 518

## SITE DESCRIPTION

Building 518 and the bermed concrete pad are located in the southeastern portion of TEAD and has been used since 1942 to store and prepare herbicides and pesticides. Previously, spills from within the building were directed to the floor drain, which connected to the storm drain and ultimately dumped into Stormwater Discharge (TEAD-82, SWMU 45). However, all liquid wastes are now containerized.

Localized areas of elevated metals and pesticides that were detected during the RFI exceeded residential risk levels.

Corrective measures were implemented in 2003 and consisted of the excavation and disposal of contaminated soil, along with Institutional Controls (ICs) in the form of land use restrictions. Land use restrictions have been applied to the site to prevent future residential use of development of the site.

## CLEANUP STRATEGY

LTM will be required at the site. LTM consists of semi-annual IC inspections.

## STATUS

**RRSE RATING:** Medium

**REGULATION:** RCRA

**CONTAMINANTS:**

Pesticides, Metals

**MEDIA OF CONCERN:** Soil

PHASES	Start	End
RFA.....	197912	198812
CS.....	197912	198812
RFI/CMS.....	198812	200009
CMD .....	200009	200109
CMI.....	200305	200311
LTM.....	200412	203508

**RC: 200311**

# TEAD-58, SWMU 42 BUILDING 539 BOMB WASHOUT

## SITE DESCRIPTION

Building 539 was used from 1942 to the early 1960s to burn small arms projectiles and recover lead. The floors were washed down and the water allowed to discharge through a concrete flume to a culvert, eventually emptying into a ditch (extending approximately 600 ft) on the northwest side of the building, then to an unlined holding pond (50 ft in diameter and 2 ft deep). There were three other furnaces in the area; two in Bldg 520 and one 255 ft to the north of the site that were operated at about the same time, that may have contributed to the area's contamination.

Very high levels of lead were found in surficial soils around the building, and in the drainage ditch and pond. The contamination exceeds residential standards. TEAD has fenced off the most highly contaminated area to keep workers from being exposed.

The CMS was approved in FY 2001. Corrective Measures Implementation was initially expected to be executed in 2004. Due to the potential presence of sensitive submunitions on the site, corrective measures implementation was delay pending an evaluation of the potential ordnance issues. These ordnance issues have been resolved, and corrective measures will be completed in summer 2005. The corrective measures to be implemented at the site consist of, the excavation of contaminated soil, consolidating it within the pond area, construction of a soil cap, and institutional controls (ICs) in the form of land use restrictions. The ICs are intended to prevent future residential use or development of the site.

## CLEANUP STRATEGY

Semi-annual inspections and maintenance of the soil cap will continue. LTM will be required at the site. LTM consists of semi-annual IC inspections.

## STATUS

**RRSE RATING:** High  
**REGULATION:** RCRA  
**CONTAMINANTS:** Metals  
**MEDIA OF CONCERN:** Soil

PHASES	Start	End
RFA.....	197912	198812
CS.....	197912	198812
RFI/CMS.....	198812	200008
IRA.....	199506	199507
DES.....	200008	200406
<b>CMI.....</b>	<b>200502</b>	<b>200607</b>
CMI(O) .....	200608	201109
LTM.....	201110	203508
<b>RC expected: 201109</b>		

TOOELE ARMY DEPOT  
INSTALLATION RESTORATION  
PROGRAM  
SITE DESCRIPTIONS  
KNOWN RELEASES

# TEAD-13, SWMU 02

## IWL & DITCHES (PAGE 1 OF 3)

### SITE DESCRIPTION

Between 1965 and 1988, the IWL received wastewater containing high levels of solvents and heavy metals from the Maintenance Area. The IWL consisted of a lagoon (200 by 400 ft.) and four unlined ditches which connected to one ditch which extended approximately 1.5 miles to the lagoon. The contaminated soils (volatiles, metals) from the IWL and the ditches were remediated in 1989. Additional sources are being investigated by the BRAC program.

A Consent Order was issued in 1985 and the Corrective Action Permit was issued in 1991.

TCE is the major contaminant and groundwater contamination had migrated beyond the installation's northern boundary. A groundwater pump and treat system started operating in late 1993 to address the TCE contaminated water.

Current data indicates that the contamination does extend beyond the boundary of the installation, though the treatment system has reduced mass and may be controlling the leading edge of the plume. Nearly 30 billion gallons of water have been treated and 2,187 lbs of TCE have been removed from the groundwater.

Though the sources are distinct, this contamination may be commingled with the plume in TEAD-101 (SWMU 58).

An Alternative Measures Evaluation and system shut-down was initiated in June 2004. This evaluation is intended to evaluate alternative management strategies that may be implemented on the site in place of the current pump and treat system. The evaluation is anticipated to continue for three years.

### CLEANUP STRATEGY

Complete the Alternative Measure evaluation, re-evaluating plume characteristics and treatment requirements.

The pump and treat and air stripping systems will be maintained in a ready state or operational mode to be turned back on if necessary.

### STATUS

**RRSE RATING:** Medium  
**REGULATION:** RCRA  
**CONTAMINANTS:** Solvents  
**MEDIA OF CONCERN:**  
Soil, Groundwater

PHASES	Start	End
RFA.....	197901 .....	197912
CS.....	197901 .....	197912
RFI/CMS.....	198210 .....	198805
IRA.....	198811 .....	199312
DES .....	198805 .....	199103
CMI.....	199301 .....	199312
<b>CMI(O) .....</b>	<b>199312 .....</b>	<b>202509</b>
<b>RC expected: 202509</b>		

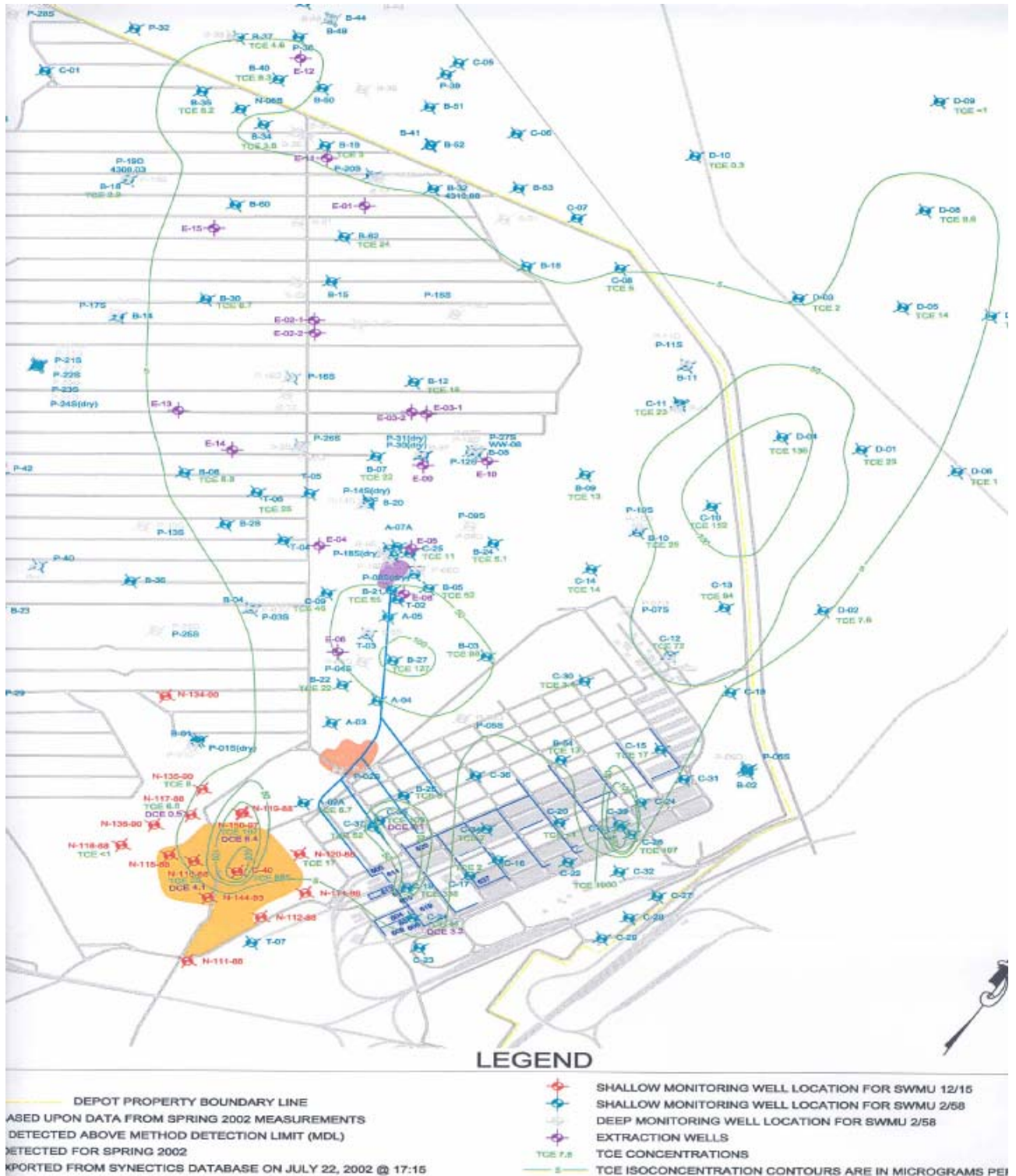
## **TEAD-13, SWMU 02**

### **IWL & DITCHES (PAGE 2 OF 3)**

#### **CLEANUP STRATEGY**

The primary objective of the project is to conduct evaluations supporting an alternate method of plume management. A 3-year interim operation mode will be initiated during which groundwater pumping is minimized, and GW/contamination rebound is monitored. Modeling and calibration will evaluate the 3 year data and an alternate groundwater strategy consisting of MNA and closure and demolition of pump and treat system will be developed, assuming the data gathered in the interim period will support such an approach. The remedy developed will incorporate TEAD-101 and TEAD-13.

# TEAD-13, SWMU 02 IWL & DITCHES (PAGE 3 OF 3)



# TEAD-11, SWMU 03 X-RAY LAGOON (BLDG 1223)

## SITE DESCRIPTION

Spent photographic developer and fixer solutions from Building 1223 were released to this 75 by 35 foot lined lagoon between 1974 and 1990. A separate septic tank and associated piping from Bldg 1225 are located next to the west of the pond.

Localized levels of heavy metals were detected in the pond's soils and underlying groundwater. It is suspected that groundwater concentrations are a result of deteriorated well screens.

An evaluation was completed in 2004 to determine the source of chromium detected in groundwater monitoring wells. Based on the results of this evaluation, it was determined that the source of chromium contamination was the deterioration of stainless steel well screens. As the chromium is not characteristic of site conditions, groundwater monitoring will be discontinued at the site, and monitoring wells will be closed and abandoned. ICs in the form of land use controls have been applied to the site. The ICs are intended to prevent future residential use and development of the site.

## CLEANUP STRATEGY

LTM will be required at the site. LTM consists of semi-annual IC inspections.

## STATUS

**RRSE RATING:** Low  
**REGULATION:** RCRA  
**CONTAMINANTS:** Metals  
**MEDIA OF CONCERN:**  
Soil, Groundwater

PHASES	Start	End
RFA.....	197912	.....198812
CS.....	197912	.....198812
RFI/CMS.....	198708	.....200108
<b>LTM.....</b>	<b>200108</b>	<b>.....203508</b>
<b>RC expected: 200108</b>		



# TEAD-81, SWMU 10

## TNT WASHOUT PONDS (FACILITY)

### SITE DESCRIPTION

This SWMU includes Building 1245 and a series of eight ponds (now dry) that were used from 1948 to 1986 as a bomb decommissioning facility. Rinse water containing explosives was released to the ponds and allowed to infiltrate and evaporate. A small plume of explosives exists in the groundwater beneath the site and explosive concentrations up to 4% have been found in the ponds' soils. Explosives concentrations in the soil exceeded residential and depot worker standards.

In 1984, a removal action was conducted which consisted of a liner being placed over four of the old ponds and clean soil being placed on top to help reduce infiltration of precipitation. The settling tanks located immediately to the north of Building 1245 were removed in 1997.

The CMS was approved in March 2003.

### CLEANUP STRATEGY

Explosives-contaminated soil (~10,000cy) will be composted and replaced onsite. The site will have institutional controls and long term monitoring of the groundwater.

### STATUS

**RRSE RATING:** High

**REGULATION:** RCRA

**CONTAMINANTS:**

Explosives, Volatiles

**MEDIA OF CONCERN:**

Soil, Groundwater

<b>PHASES</b>	<b>Start</b>	<b>End</b>
RFA.....	197912 .....	198812
CS.....	197912 .....	198812
RFI/CMS.....	198708 .....	200206
IRA.....	198410 .....	199512
DES .....	200403 .....	200507
<b>CMI.....</b>	<b>200508 .....</b>	<b>200608</b>
CMI(O) .....	200608 .....	200708
LTM.....	200708 .....	203508
<b>RC expected: 200708</b>		

# TEAD-31, SWMU 11 LAUNDRY (EFFLUENT) PONDS

## SITE DESCRIPTION

Both the Laundry Effluent Pond and the Sewage Pond are located next to the TNT Washout Facility (TEAD-81). The laundry pond accepted laundry wastewater from approximately 1950 until 1990 and boiler blowdown water until 1995. The sewage pond is a mostly dry pond that appeared to receive liquids from a septic tank and leach field. Several debris piles of waste metal cuttings and miscellaneous materials exist to the east of these ponds.

During the RFI, the majority of the cuttings and larger wastes were removed. The RFI found that the sediment contained metals and VOCs; the sludge contained metals, VOCs, and SVOCs; and the soil contained metals and TPH. The residential and industrial risk assessments were found unacceptable.

Corrective Measures (sludge removal) were completed in 2003. Corrective measures implemented included the excavation and off-site disposal of contaminated soil, along with institutional controls (ICs) in the form of land use restrictions. The ICs are intended to prevent future residential use and development of the site.

## CLEANUP STRATEGY

LTM will be required at the site. LTM consists of semi-annual IC inspections.

## STATUS

**RRSE RATING:** High  
**REGULATION:** RCRA  
**CONTAMINANTS:**  
Metals, SVOCs, VOCs  
**MEDIA OF CONCERN:**  
Soil, Sediment, Surface Water

<b>PHASES</b>	<b>Start</b>	<b>End</b>
RFA.....	197912 .....	198812
CS.....	197912 .....	198812
RFI .....	198708 .....	200104
IRA.....	199506 .....	199708
DES .....	200104 .....	200109
CMI.....	200109 .....	200309
<b>LTM .....</b>	<b>200412 .....</b>	<b>203508</b>
<b>RC: 200309</b>		

# TEAD-09, SWMU 12/15

## NORTH AREA SANITARY LANDFILL

### SITE DESCRIPTION

TEAD's 140-acre abandoned landfill, containing 70 acres of debris, is located in and around an arroyo and was used from 1942 to about 1995. The disposal of hazardous waste was prohibited after 1980. A wide variety of wastes, including hazardous waste and liquids, have been disposed of here. Groundwater beneath the site is contaminated with volatile organics.

Metals, SVOCs, VOCs, and pesticides in soil and VOCs in the groundwater exceed regulatory standards.

Groundwater monitoring began in the early 1990s. The boundary fence line was extended in FY00. Debris located off site was relocated within the landfill boundaries in March 2003.

This site will include a CAMU for solidified soil from TEAD-16.

### STATUS

**RRSE RATING:** High  
**REGULATION:** RCRA  
**CONTAMINANTS:**  
 Volatiles, Metals, Pesticides  
**MEDIA OF CONCERN:**  
 Soil, Groundwater

<b>PHASES</b>	<b>Start</b>	<b>End</b>
RFA.....	197912 .....	198812
CS.....	197912 .....	198812
RFI .....	198812 .....	200403
IRA.....	200001 .....	200303
<b>CMD .....</b>	<b>200402 .....</b>	<b>200506</b>
CMI.....	200508 .....	200607
CMI(O) .....	200607 .....	201009
LTM.....	201010 .....	203508
<b>RC expected: 201009</b>		

### CLEANUP STRATEGY

Corrective measures to be implemented at this site address soil contaminants. Groundwater management activities will be conducted along with TEAD-13 and TEAD-101.

The proposed plan is to cover exposed debris, re-vegetate and re-grade for drainage (funded in FY05) and apply institutional controls (ICs) in the form of land use restrictions. ICs applied to the site are intended to prevent future residential use or development of the site. Corrective measures operations at the site will include maintenance of the soil cover, vegetation, and fencing. LTM will be required for the site. LTM will consist of semiannual LUC inspections.

# TEAD-50, SWMU 25

## BATTERY (SHOP) RECHARGE OPS (BLDG 1252)

### SITE DESCRIPTION

Building 1252 was the Battery Shop and it was used for the maintenance and repair of vehicle and forklift batteries. Past activities discharged spent battery acid and washdown water to a shallow ditch.

High, localized levels of metals were detected in the ditch during the RFI. The RFI found unacceptable risk to the future resident and on site workers.

TEAD has taken action to install a fence (1995) around the area with the highest levels of metal contamination.

Excavation and off-site disposal of ~321cy was funded 4th quarter of FY02.

Corrective Measures (soil removal) were completed in 2003. Corrective measures consisted of the excavation and off-site disposal of contaminated soil, along with the application of institutional controls (ICs) in the form of land use restrictions. The ICs are intended to prevent future residential use or development of the site.

### CLEANUP STRATEGY

LTM will be required at the site. LTM consists of semi-annual IC inspections.

### STATUS

**RRSE RATING:** High  
**REGULATION:** RCRA  
**CONTAMINANTS:** Metals  
**MEDIA OF CONCERN:** Soil

PHASES	Start	End
RFA.....	197912	198812
CI .....	197912	198812
RFI/CMS.....	198708	200009
IRA.....	199504	199508
CMD .....	200009	200110
CMI.....	200308	200311
<b>LTM.....</b>	<b>200311</b>	<b>203508</b>
<b>RC: 200311</b>		

## RESPONSE COMPLETE AEDB-R SITES

<b>AEDB-R #</b>	<b>SWMU #</b>	<b>AEDB-R Title</b>	<b>RC Date</b>
TEAD-01	1	OB/OD Area	200106
TEAD-10	5	PCB Spill Site (Pole 184	199608
TEAD-14	24	Battery Pit	200106
TEAD-18	19	AED Demil Test Facility (Bldg 1370-1380)	200007
TEAD-21	27	RCRA Container Storage	199604
TEAD-24A	30	Old IWL	200106
TEAD-29	37	Contaminated Waste Processor Bldg 1325	200106
TEAD-33	16	Septic Tanks	198812
TEAD-38	41	Box Elder Wash Drum Site	199610
TEAD-67	43	Container Storage for P999	199310
TEAD-70	46	Used Oil Dumpsters	200202
TEAD-80	14	Sewage Lagoons	199710
TEAD-83	45	Storm Discharge	200106
TEAD-84	48	Old Dispensary (Discharge, Bldg 400)	200106

## PAST MILESTONES

*Start Date of IRP at Installation:* 1979

### *Past Phase Completion Milestones:*

Because the SWMUs are divided into 3 major groups and 5 sub-groups, there are 5 separate schedules for TEAD. For a schedule of the IRP work completed to date and planned for the next few years at TEAD, see below.

#### Site-Wide

Initial Installation Assessment	Dec 79
Exploratory Survey	Oct 82
PA/SI	Dec 88
RI	Dec 90

#### FFA SWMUs

Preliminary Baseline Risk Assessment	Feb 93
Memorandum on Remedial Action Objectives	Feb 93
Assembled Alternatives Screening Memorandum	Feb 93
Memorandum on Detailed Analysis of Alternatives	Jan 94
RI (OUs 5,6,7 & 10)	Mar 94
FS (OUs 5,6,7 & 10)	Apr 94
ROD (OUs 5,6,7, & 10)	Sep 94
RD (OUs 7 & 10)	Dec 95
RI (OUs 4, 8, & 9)	Jun 97
RA (OUs 5, 6, 7, & 10)	Sep 96
PP and FS (OU 4 & 8)	Sep 00

#### Known Releases SWMUs

Phase I RFI	Mar 92
Phase II RFI	May 96

#### Suspected Releases SWMUs

Phase I RFI	Oct 93
Group A, Phase II RFI	Aug 98
Group B, Phase II RFI	Dec 97

#### Group A and B

CMS and FS	B - Oct 00
	A - Apr 01
TEAD-70A, Response Complete	Nov 01

### PROJECTED MILESTONES

*Projected construction complete and NPL Deletion Date:* 2015+

*Estimated Completion Date of All RA(C) Activities:* 2008

*Estimated Completion Date of IRP at Installation (include LTM phase):* 2036+

## PRIOR YEAR FUNDING

<b>FY79</b>	Initial Assessment	\$25,000	
<b>FY82</b>	Exploratory Survey	\$422,500	
<b>FY85</b>	Preliminary Assessment/Site Investigation	\$5,000	
<b>FY87</b>	PA/SI	\$30,000	
	Remedial Investigation/Feasibility Study	\$536,300	
	IWL Remedial Action	\$168,400	<b>\$734,700</b>
<b>FY88</b>	RI/FS	\$245,900	
	IWL Off Post RI/FS	\$2,224,100	
	IWL Remedial Action	\$4,200,000	<b>\$6,670,000</b>
<b>FY89</b>	RI/FS	\$1,525,700	
	IWL RI/FS	\$646,700	
	IWL S&A	\$231,300	<b>\$2,403,700</b>
<b>FY90</b>			
	RI/FS	\$155,600	
	IWL Remedial Design RD/RA	\$272,100	<b>\$427,700</b>
<b>FY91</b>	North Area RI/FS &RFI	\$3,773,600	
	IWL RD/RA	\$7,977,700	
	Installation Support: TEAD	\$8,000	<b>\$11,759,300</b>
<b>FY92</b>	RI/FS	\$813,000	
	RFI	\$3,326,700	
	State Reimbursement	\$57,400	
	IWL RD/RA/S & A	\$7,348,900	<b>\$11,546,000</b>
<b>FY93</b>	RI/FS	\$3,474,500	
	RFI	\$2,540,000	
	Off Post UCO's	\$775,500	
	State Reimbursement	\$31,400	
	IWL RD/RA/S\$A	\$5,804,400	
	SWMU 13 Tire Removal	\$160,000	<b>\$12,785,800</b>
<b>FY94</b>	TNT Washout Fac. REM	\$40,000	
	Off Post UXO's REM	\$519,000	
	Reimbursement of State Service	\$36,900	
	GW Treatment-IWL	\$1,600,000	
	GW Treatment-IWL S&A	\$528,000	
	GW Sampling & Analysis	\$225,000	



	Kn Rel RFI	\$1,400	
	FFA RI/FS	\$1,725,000	
	Group B RFI	\$26,700	
	Group A RFI	\$84,900	
	Decon Pad Removal	\$15,000	
	Box Elder RD/RA	\$15,000	<b>\$4,816,900</b>
<b>FY95</b>	Public Relations	\$39,000	
	TEAD-N Off-Post UXOs	\$35,400	
	Decon Pad RD/RA	\$236,000	
	TNT Washout Fac. RD/RA	\$344,400	
	Box Elder RD/RA	\$433,400	
	Reimbursement Of Ut Ser.	\$35,300	
	GW Treatment-IWL	\$1,850,000	
	GW Sampling & Analysis	\$324,500	
	GW Treatment-IWL, S&A	\$48,000	
	Installation Support	\$39,000	
	Known Rel CMS	\$40,000	
	RD S&A	\$96,000	
	Group B RFI/CMS	\$59,400	
	Sewer Box RD/RA	\$51,000	
	Battery Pit RD/RA	\$3,000	<b>\$3,634,400</b>
<b>FY96</b>	GW Monitoring Kn Rel	\$845,200	
	FFA RI/FS	\$1,092,000	
	FFA RD/RA	\$181,800	
	Group A RFI/CMS	\$1,261,000	
	Group B RFI/CMS	\$786,500	
	Kn Rel RFI/CMS	\$2,720,000	
	GW Treatment OPS	\$2,444,000	
	Installation Support	\$118,200	
	Decon Pad-IWL REM	\$10,000	
	Box Elder Drum Site RA	\$15,000	
	TNT Facility Tank REM	\$15,000	
	Battery Pit REM	\$60,000	
	Reimbursement of Utah SVCS	\$39,000	<b>\$9,587,700</b>
<b>FY97</b>	TNT Washout Facility REM/SA (TEAD93-025)	\$10,000	
	GW Monitoring Kn Rel (TN-SF-28)	\$272,000	
	FFA UT Reimb. (TN-91-019)	\$50,000	
	Kn Rel RD (TN-SF-28)	\$40,000	
	Kn Rel IRA (TN-SF-28)	\$40,000	
	Kn Rel PY/RA (TN-SF-28)	\$5,000	
	GW Treatment OPS (TN-SW-27)	\$999,000	
	GW Treatment PY/RI (TN-SW-27)	\$230,000	
	TRC (TEAD97-001)	\$24,000	<b>\$1,670,000</b>

<b>FY98</b>	TEAD-09, Landfill (LTM)	\$115,000	
	TEAD-81, TNT Washout Ponds (LTM)	\$115,000	
	TEAD-13, IWL and Ditches (RA)	\$160,000	
	TEAD-13, IWL and Ditches (LTO)	\$2,470,000	
	TEAD-05, State Reimbursement (PGMT)	\$100,000	
	Technical Review Committee (PGMT)	\$24,000	<b>\$2,984,000</b>
<b>FY99</b>	TEAD-81, TNT Washout Ponds (LTM)	\$115,000	
	TEAD-13, IWL and Ditches (LTM)	\$142,000	
	TEAD-13, IWL and Ditches (LTO)	\$2,014,000	
	TEAD-09, Landfill (LTM)	\$115,000	<b>\$2,386,000</b>
<b>FY00</b>	TEAD-13, IWL and Ditches (LTO)	\$1,900,000	
	TEAD-09, Sanitary Landfill (LTM)	\$150,000	
	TEAD-09, Sanitary Landfill (IRA)	\$19,000	
	TEAD-09, Sanitary Landfill (RD)	\$350,000	
	TEAD-81, TNT Washout Ponds (LTM)	\$150,000	
	TEAD-05, Old Burn Area (RD)	\$285,000	
	TEAD-27, Wastewater Spreading Area (RD)	\$75,000	
	TEAD-16, Firing Range (RD)	\$225,000	
	TEAD-06, Tire Disposal Site (RA)	\$5,000	
	TEAD-28, Old Burn Staging Area(CMI)	\$5,000	
	TEAD-34, Bldg 1303 Washout Ponds (RA)	\$5,000	
	TEAD-70, Used Oil Dumpsters (CMI)	\$10,000	
	TEAD-18, AED Demil Facility (CMI)	\$5,000	
	TEAD-84, Old Dispensary (CMI)	\$5,000	
	TEAD-81, TNT Washout Ponds (CMD)	\$346,000	
	TEAD-50, Battery Shop (CMD)	\$49,000	
	TEAD-31, Laundry Pond (CMD)	\$14,000	
	TEAD-14, Battery Pit (CMI)	\$5,000	
	TEAD-24A, Old Industrial Waste Lagoon (CMI)	\$5,000	
	TEAD-11, X-Ray Lagoon (CMD)	\$9,000	
	TEAD-35, Deactivation Furnace (CMD)	\$12,000	
	TEAD-37, Deactivation Furnace (CMD)	\$14,000	
	TEAD- 53, Pesticide Storage and Mixing Facility (CMD)	\$22,000	
	TEAD-01, OB/OD Area (CMI)	\$10,000	
	TEAD-29, Contaminated Waste Processor (CMI)	\$5,000	
	TEAD-83, Stormwater Discharge Area (CMI)	\$5,000	<b>\$3,685,000</b>
<b>FY01</b>	TEAD-05, SWMU 6	\$15,451	
	TEAD-16, SWMU 8	\$9,601	
	TEAD-81, SWMU 10	\$45,240	
	TEAD-31, SWMU 11	\$73,282	
	TEAD-09, SWMU 12/15	\$258,197	
	TEAD-12, SWMU 23	\$167,571	
	TEAD-50, SWMU 25	\$288,085	

TEAD-54, SWMU 34	\$37,261	
TEAD-27, SWMU 35	\$10,483	
TEAD-36, SWMU 40	\$19,460	
TEAD-13 SWMU 2	\$1,774,340	
TEAD-35, SWMU 20	\$4,931	
TEAD-37, SWMU 21	\$23,342	
TEAD-58, SWMU 42	\$11,293	<b>\$2,738,537</b>

<b>FY02</b>	TEAD-13, Old Burn Area SWMU 6 (RAC)	\$31,000	
	TEAD-09, Sanitary Landfill SWMU 12/15 (RD)	\$25,000	
	TEAD-12 Bomb and Shell Reconditioning Bldg. SWMU 23 (RD)	\$13,000	
	TEAD-12 Bomb and Shell Reconditioning Bldg. SWMU 23 (RAC)	\$25,000	
	TEAD-13, IWL and Ditches SWMU2 (RAO)	\$2,409,000	
	TEAD-16, Small Arms Firing Range SWMU 8 (RAC)	\$31,000	
	TEAD-31, Laundry Pond SWMU 11(RAC)	\$23,000	
	TEAD-35, AED Deactivation Furnace SWMU 20(RAC)	\$42,000	
	TEAD-37, Deactivation Furnace SWMU 21(RAC)	\$46,000	
	TEAD-50, Battery Recharge Operations SWMU 25(RAC)	\$46,000	
	TEAD-54, Pesticide Storage and Handling Bldg. SWMU 34 (RAC)	\$718,000	
	TEAD-81, TNT Washout Ponds (LTM)	\$12,000	
	RAB Support	\$37,000	<b>\$3,458,000</b>

<b>FY03</b>	TEAD-05, Old Burn Area	\$684,000	
	TEAD-09, Sanitary Landfill	\$217,000	
	TEAD-11, X-ray Lagoon	\$40,000	
	TEAD-13, Indust Waste Lagoon	\$1,399,000	
	TEAD-16, Small Arms Firing Range	\$684,000	
	TEAD-31, Laundry Effluent Ponds	\$436,000	
	TEAD-35, AED Furnace	\$32,000	
	TEAD-36, AED Test Range	\$119,500	
	TEAD-37, Ammo Furnace	\$164,000	
	TEAD-58, Bldg 539, Bomb Washout	\$964,000	
	TEAD-81, TNT Washout Pond	\$40,000	<b>\$4,779,500</b>

**FY04** **\$2,270,000**

**TOTAL PRIOR YEAR FUNDS:** **\$93,413,737**

## CURRENT YEAR FUNDING

**FY05** **\$3,095,000**

**FUTURE YEAR FUNDING**

***TOTAL FUTURE REQUIREMENTS:*** \$21,590,000

***TOTAL IRP PROGRAM COSTS:*** \$118,098,737

### STATUS OF COMMUNITY INVOLVEMENT

The Tooele Army Depot maintains an active community involvement program through quarterly Technical Review Committee Meetings to address the on-going IRP Program. These meetings are public meetings and are advertised in the local newspaper as well as through the mailing of notices to those individuals on Tooele Army Depot's mailing list. Even though the public is invited, typically there is minimal participation by the public. Those that typically attend the meetings are from state, federal, and local agencies.

### DETERMINING INTEREST IN ESTABLISHING A RAB

Tooele Army Depot formed a RAB to address issues relating to restoration efforts on excess property resulting from the BRAC 93 decision to realign Tooele Army Depot's maintenance mission. This RAB was formed separately from the TRC and Tooele Army Depot felt that it would be better to address BRAC and IRP issues separately. The BRAC RAB was formed in 1994 and included 18 members. These members represented local, state, and federal agencies, as well as the Army and the public. The RAB included 18 public members. In an effort to stimulate more interest in the on-going IRP program, the BRAC RAB was combined with the TRC in 1999.

# TOOELE ARMY DEPOT

## MILITARY MUNITIONS RESPONSE PROGRAM

**STATUS:** NPL Installation Listed October 1990

**AEDB-R SITES/SITES RC:** 5/0

**AEDB-R SITE TYPES:**

5 Unexploded Munitions/Ordnance

**CONTAMINANTS OF CONCERN:** UXO

**MEDIA OF CONCERN:** Soil

**COMPLETED REM/IRA/RA:** None

**IDENTIFIED POSSIBLE REM/IRA/RA:**

RA at TEAD-001-R-01, 002-R-01, 003-R-01, 004-R-01, 005-R-01,

**TOTAL ER,A FUNDING:**

PRIOR YEAR	\$25,000
CURRENT	\$0
FUTURE	\$46,054,000

**DURATION OF IRP:**

Year of MMRP Inception:	2003
Year of RA Completion:	2015+
Year of MMRP Completion:	2015+

---

## MMRP Contamination Assessment

***Assessment Overview:*** The Military Munitions Response Program at Tooele Army Depot was initiated in 2002. In February 2002 an inventory of the Active/Inactive ranges on the installation was completed. In November of the same year, the inventory of Closed, Transferring, and Transferred (CTT) Ranges was completed. Those sites identified in the CTT inventory (5 sites) are being addressed under the MMRP program. Of the five sites, two are located on privately owned property adjacent to the installation. In 1994, a partial UXO clearance of TEAD-001-R-01 was completed.

***Cleanup Exit Strategy:*** Investigation is planned.



## MMRP Previous Studies

Title	Author	Date
Closed, Transferring, and Transferred Range Site Inventory	Techlaw	Nov-92
Active/Inactive Range Inventory	Techlaw	Feb-02
UXO Removal Action Final Report	Human Factors	Dec-94

# TOOELE ARMY DEPOT

## MILITARY MUNITION RESPONSE PROGRAM

### SITE DESCRIPTIONS

# TEAD-001-R-01

## OB/OD AREA

### SITE DESCRIPTION

This is a transferred disposal site, owned by private, county, and federal parties, comprising 478 acres to the southwest of the installation. Munitions including rockets, bombs, grenades, medium and large caliber munitions, mortars, propellants, and small arms were burned or detonated in the OB/OD area on the installation beginning in 1942. Kickouts from operations in the OB/OD Area within the installation went into this area from 1942 until approximately 1995. The OB/OD kickouts are the only known source of munitions in this area. A portion of this area near the installation boundary has been surveyed and cleared of UXO, but not the entire area. The land is currently used for agricultural purposes or is undeveloped.

A portion of this site was cleared in 1996.

### CLEANUP STRATEGY

Additional investigation is planned. A remedial action may be needed.

### STATUS

**RAC SCORE:** 2 - Serious

**CONTAMINANTS:** UXO

**MEDIA OF CONCERN:** Soil

<b>PHASES</b>	<b>Start</b>	<b>End</b>
PA .....	200207 .....	200305
SI.....	200610 .....	200709
RI/FS.....	201110 .....	201209
RD.....	201410 .....	201509
RA.....	201610 .....	201709
LTM.....	201710 .....	204709

**RC expected: 201707**

# TEAD-002-R-01

## NE (Northeast) DEMIL AREA

### SITE DESCRIPTION

This is a closed munitions site, still owned by the U.S. Army, comprising 626 acres in the northeast part of the installation. Fuzes, hand grenades, and small arms have been found in this crater, where munitions were demilitarized from approximately 1953 to 1966. This land remains generally undeveloped, although part of the safety fan covers the revetment area in the northern part of the installation. The central demil crater has been surveyed for munitions, but a systematic cleanup has not been initiated.

### CLEANUP STRATEGY

Additional investigation is planned. Remedial actions may be needed.

### STATUS

**RAC SCORE:** 2 - Serious  
**CONTAMINANTS:** UXO  
**MEDIA OF CONCERN:**  
Soil, Groundwater

<b>PHASES</b>	<b>Start</b>	<b>End</b>
PA .....	200207 .....	200305
SI .....	200610 .....	200709
RI/FS .....	201110 .....	101209
RD .....	201510 .....	201609
RA .....	201610 .....	201709
RA(O) .....	201710 .....	203209
LTM .....	203210 .....	204709

**RC expected: 203209**

# TEAD-003-R-01

## CHEMICAL RANGE

### SITE DESCRIPTION

This is a transferred range, owned by private, state, and federal parties, comprising 9 acres to the south of the installation. Smokes, smoke bombs, pyrotechnics, riot control agents, and smoke hand grenades were tested at the Chemical Range from approximately 1942 to 1972. The area of this range is the area where the safety fan extends offsite. This land is currently undeveloped, but is used for grazing purposes. There have been no known UXO responses on these 9 acres.

### CLEANUP STRATEGY

Additional investigation is planned. Remedial actions may be needed.

### STATUS

**RAC SCORE:** 3 - Moderate

**CONTAMINANTS:** UXO

**MEDIA OF CONCERN:**

Soil, Groundwater

<b>PHASES</b>	<b>Start</b>	<b>End</b>
PA .....	200207 .....	200305
RI .....	201110 .....	201209
RD .....	201510 .....	201609
RA .....	201610 .....	201709
RA(O) .....	201710 .....	203209
LTM .....	203210 .....	204709

**RC expected: 203209**

# TEAD-004-R-01 OLD BURN AREA

## SITE DESCRIPTION

This is a closed munitions site, still owned by the U.S. Army, comprising 51 acres in the east-central part of the installation. Smokes, grenades, propellants, and small arms were demilitarized and disposed around this building from approximately 1942 to 1972. The only current operations in this area are grazing and remediation activities. The Installation Restoration project for this area is only intended to remediate a portion of the UXO at the site. Only UXO identified during the remediation of the specific areas of the site slated for cleanup will be removed.

The lead-contaminated soil is being addressed under IRP site TEAD-05 (SWMU 06).

## CLEANUP STRATEGY

Additional investigation is planned. A remedial action may be needed.

## STATUS

**RAC SCORE:** 2 - Serious

**CONTAMINANTS:** UXO

**MEDIA OF CONCERN:** Soil

<b>PHASES</b>	<b>Start</b>	<b>End</b>
PA .....	200207 .....	200305
RI .....	201110 .....	201209
RD .....	201510 .....	201609
RA .....	201610 .....	201709
LTM .....	201710 .....	204709
<b>RC expected: 201709</b>		

# TEAD-005-R-01

## BUILDING 539 DISPOSAL AREA

### SITE DESCRIPTION

This is a closed munitions site, still owned by the U.S. Army, comprising 97 acres in the east-central part of the installation. A variety of munitions, including bombs, smokes, grenades, land mines, medium and large caliber munitions, small arms, mortars, fuzes, and secondary explosives, were demilitarized or disposed in the area around this building from approximately 1942 to 1972. This site is not currently being used except for survey and cleanup operations. The Installation Restoration program will clean up only a small portion of this site, including a now-evaporated washout pond and the ditch that carried wastewater to it, and any UXO that is found incidental to the cleanup of the pond and the ditch.

### STATUS

**RAC SCORE:** 1 - High  
**CONTAMINANTS:** UXO  
**MEDIA OF CONCERN:**  
Soil, Groundwater

<b>PHASES</b>	<b>Start</b>	<b>End</b>
PA .....	200207 .....	200305
RI .....	201110 .....	201209
RD .....	201510 .....	201609
RA .....	201610 .....	201709
RA(O) .....	201710 .....	203209
LTM .....	203210 .....	204709

**RC expected: 203209**

The metals-contaminated soil is being addressed under TEAD-58 (SWMU 42).

### CLEANUP STRATEGY

Additional investigation is planned. Remedial actions may be needed.

### PAST MILESTONES

*Start Date of IRP at Installation:* 2003

*Past Phase Completion Milestones:* None

*IAG/FFA Driven Milestones:* None

### PROJECTED MILESTONES

*Projected ROD/DD Approval Date:* 2015+

*Projected Phase Completion Milestones:* 2015+

*Projected construction complete and NPL Deletion Date:* 2015+

*Estimated Completion Date of All RA(C) Activities:* 2015+

*Estimated Completion Date of IRP at Installation (include LTM phase):* 2015+



# Tooele Army Depot MMRP Schedule

(Based on current funding)

SITE #	SITE NAME	PHASE	2006	2007	2008	2009	2010	2011+
TEAD-001-R-01	OB-OD Area	SI						
		RIFS						
		RD						
		RA(C)						
		LTM						
TEAD-002-R-01	NE DEMIL Area	SI						
		RIFS						
		RD						
		RA(C)						
		RA(O)						
		LTM						
TEAD-003-R-01	Chemical Range	RIFS						
		RD						
		RA(C)						
		RA(O)						
		LTM						
TEAD-004-R-01	Old Burn Area	RIFS						
		RD						
		RA(C)						
		LTM						
TEAD-005-R-01	Building 539 Disposal Area	RIFS						
		RD						
		RA(C)						
		RA(O)						
		LTM						

**PRIOR YEAR FUNDING**

FT02    MMRP Inventory                      \$25,000

**CURRENT YEAR FUNDING**

FY05    None

**FUTURE YEAR FUNDING**

***TOTAL FUTURE REQUIREMENTS:*** \$46,054,000

***TOTAL IRP PROGRAM COSTS:*** \$46,079,000

# TOOELE ARMY DEPOT

## BRAC INSTALLATION RESTORATION PROGRAM

**STATUS:** NPL (Score=53.95) with off-site ground water contamination in 1990. Restoration activities are being conducted in accordance with a FFA and RCRA Corrective Action Permit.

**AEDB-R SITES/SITES RC:** 29/16

**AEDB-R SITE TYPES:**

1 Above Ground Storage Tank	1 Chemical Disposal	1 Contaminated Soil Piles
1 Disposal Pit/Dry Well	2 Drainage Ditch	1 Firing Range
1 Industrial Discharge	1 Small Arms Range	1 Soil Contamination after Tank Removal
2 Spill Site Area	10 Storage Area	2 Surface Impoundment/Lagoon
1 Underground Storage Tank	2 Waste Lines	2 Waste Treatment Plant

**CONTAMINANTS OF CONCERN:** VOCs, SVOCs, Metals, PCBs, and Petroleum Constituents

**MEDIA OF CONCERN:** Soil and Ground Water

**COMPLETED REM/IRA/RA:**

TEAD-08, RAD Storage Building 659 – RA Building Decontamination (1999)  
TEAD-101, Industrial Area Ground Water Sources – IRA Building 679 Sump Removal (2002)  
TEAD-101, Industrial Area Ground Water Sources – IRA Ground Water Mgmt Area (2004)  
TEAD-97, Transformer Storage Building 659 – RA Building Decontamination (1999)  
TEAD-70A, Used Oil Dumpsters – RA Soil Removal (2002)  
TEAD-85, Storm Water/Industrial Waste Water – RA Soil Removal (2002)  
TEAD-88, Charcoal Spreading Area – RA Soil Removal (2002)  
TEAD-90, Sandblast Area – IRA Site Fencing (1998)  
TEAD-90, Sandblast Area – RA Soil Removal (2002)  
TEAD-94, Skeet Range – IRA Site Fencing (1998)  
TEAD-94, Skeet Range – RA Soil Removal (2002)  
TEAD-96, Building 611 Firing Range – RA Soil Removal and Building Demolition (1998)  
TEAD-93, Gravel Pit Disposal Area – Site Fencing (1998)

**IDENTIFIED POSSIBLE REM/IRA/RA:**

TEAD-93, Gravel Pit Disposal Area – RA Soil Removal (2005)

**TOTAL BRAC FUNDING:**

Prior Year (up to FY04):	\$Unknown
Current (FY05):	\$2,555,000
Future:	\$3,368,000

**DURATION OF BRAC IRP:**

Year of BRAC IRP Inception:	1993
Year of RA Completion:	2007
Year of BRAC IRP Completion:	2036

# BRAC Contamination Assessment

## *Assessment Overview:*

In 1993, the Base Realignment and Closure (BRAC) Commission recommended the realignment of the Tooele Army Depot (TEAD) equipment and vehicle maintenance mission with the installation retaining its conventional ammunition storage, maintenance, and demilitarization missions. The installation also retained its mission of design, testing, and manufacturing of ammunition peculiar equipment. As a result of the realignment, approximately 1700 acres, and over 200 buildings/facilities were excessed.

At the time of realignment, there were 16 restoration sites located on the excessed property. An additional 13 sites were identified subsequent to the BRAC action and added to the restoration program. Site types included industrial sites, underground storage tanks, burn areas, drain fields, and spill sites. Contaminants known to exist on the excessed property consisted primarily of solvents, metals, PCBs, and petroleum constituents. Media impacted by these contaminants included surface soil, subsurface soil, and ground water.

In 1994, TEAD formed a Restoration Advisory Board (RAB). Public interest in restoration activities associated with the excess BRAC property has been limited. Also in 1994, TEAD formed a BRAC Cleanup Team (BCT) consisting of representatives from the Army, State of Utah, and the U.S. Environmental Protection Agency, Region 8. The BCT has been very proactive in structuring the cleanup program to facilitate redevelopment and reuse of the property.

In 1998, the excess property was transferred to the Tooele City Redevelopment Agency (RDA) through the BRAC Early Transfer Authority on a no cost economic development conveyance. In 1999, the Tooele City RDA subsequently sold the property to be developed as a commercial industrial park. To ensure that on-going restoration activities did not adversely impact redevelopment, Covenants, Conditions, and Restrictions (CCRs) were applied to the property that have been used to manage the use of the property, during completion of site restoration.

To date, all required response actions have been completed on 27 of the 29 sites located on the property. Two sites remain open, TEAD-93 (Gravel Pit Disposal Area) and TEAD-101 (Industrial Area Ground Water Sources and Northeast Boundary Plume). Required response actions at TEAD-93 are planned for completion in FY05. Investigations are on-going at TEAD-101. TEAD-101 consists of potential ground water contaminant sources located throughout the former TEAD industrial area, and a solvent contaminated ground water plume which has migrated off-site and underlies property owned by several private parties.

## BRAC IRP Previous Studies

Title	Author	Date
SWMU 58 Phase II RCRA Facility Investigation Report for Group B SWMUs	SAIC	June-96
Group B Suspected Releases Corrective Measures Study Workplan	URS	April-98
Group C Suspected Releases Corrective Measures Study Workplan	URS	July-98
Decision Document for No Action, Group C Solid Waste Management Units	TEAD	October-00
Decision Document for No Action, Group B Solid Waste Management Units	TEAD	November-00
Decision Document for Corrective Action, Group B Solid Waste Management Units	URS	November-00
Group B Suspected Releases Corrective Measures Study Report	URS	December-00
Decision Document for Corrective Action, Group C Solid Waste Management Units	URS	January-01
Group C Suspected Releases Corrective Measures Study Report	URS	July-01
SWMU 58 Phase I RCRA Facility Investigation, On-site Plume and Sources	Kleinfelder	March-02
SWMU 49 Corrective Measures Workplan	USACE	March-02
SWMU 49, Corrective Measures Construction Completion Report	Northwind	March-02
Decision Document for Landfill Debris Relocation	TEAD	May-02
Building 679 Sump Removal Workplan	Kleinfelder/AEEC	June-02
SWMU 52C Corrective Measure Workplan	USACE	July-02
Record of Decision for Operable Unit 4	TEAD	October-02
SWMU 52D Corrective Measures Workplan	USACE	October-02
SWMU 58 Phase I RCRA Facility Investigation, Off-site Plume	Parsons	March-03
Building 679 Sump Removal Completion Report	AEEC	October-03
SWMU 58, Interim Action, Ground Water Management Area Implementation Plan	Parsons	March-04
SWMU 52D Corrective Measures Construction Completion Report	SCA/Laguana	April-04
SWMU 58 Phase II RCRA Facility Investigation Workplan	Parsons	August-04
SWMU 49 Corrective Measures Construction Completion Report	USACE	August-04
Remedial Design Plan for Institutional Controls at OU 5	TEAD	February-05
SWMU 58, Supplement Risk Assessment for Exposure to VOCs in Shallow Soil	Parsons	February-05
SWMU 58 Risk Assumptions Document	Parsons	March-05

# TOOELE ARMY DEPOT

## BRAC INSTALLATION RESTORATION PROGRAM

### SITE DESCRIPTIONS

# TEAD-03, SWMU 31 TRANSFORMER STORAGE SITE

## SITE DESCRIPTION

This site was used for temporary storage of PCB transformers from 1979 to 1980. The site is a flat gravel covered area, measuring 625 feet by 300 feet. No leaks or spills of PCBs were reported during the short-term storage of transformers on the site. Investigations were conducted to determine if soil contamination resulted from the storage of transformers. No PCBs were detected in soils. SVOCs were detected at levels below risk base standards for industrial use. Residual contamination remains on site that poses a risk to hypothetical future residents. The reasonably anticipated future use of the site is industrial. The remedy selected for the site consists of Land Use Controls (LUCs) in the form of deed restrictions. Deed restrictions have been placed on the site to prevent future residential development. A Remedial Design Plan for implementation and monitoring of LUCs has been prepared. Five year reviews will be required to ensure that the restrictions remain protective.

## CLEANUP STRATEGY

LTM consists of five year reviews and annual LUC inspections.

## STATUS

**RRSE:** Low

**REGULATION:** CERCLA

**CONTAMINANTS:** SVOCs

**MEDIA OF CONCERN:** Soil

<b>PHASES</b>	<b>Start</b>	<b>End</b>
PA .....	197912 .....	198812
SI .....	197912 .....	198812
RI .....	198708 .....	200002
RA .....	200502 .....	200502
<b>LTM</b> .....	<b>200502</b> .....	<b>203508</b>
<b>RC: 200502</b>		



## TEAD-04, SWMU 4 SANDBLAST AREAS

### SITE DESCRIPTION

SWMU 04 is located on the Base Realignment and Closure (BRAC) parcel, within the former TEAD industrial area. It includes sandblast areas outside Buildings 600, 615, and 617. Degreasing, sandblasting, paint stripping, and painting operations were conducted at these facilities. Degreasing wastes, as well as wastes from stripping and painting operations, were drummed and removed for offsite disposal. Residual contamination remains on the site that poses a risk to hypothetical future residents. The reasonably anticipated future use of the site is industrial. Corrective measures implemented at the site consist of Land Use Controls (LUCs) in the form of deed restrictions. Deed restrictions have been placed on the site to prevent future residential use and development. Site management will be required under TEADs RCRA Post Closure Monitoring and Corrective Action Permit to ensure that the restrictions remain protective.

### CLEANUP STRATEGY

LTM will consist of semi-annual LUC inspections.

### STATUS

**RRSE:** High

**REGULATION:** RCRA

**CONTAMINANTS:** Metals

**MEDIA OF CONCERN:** Soil

<b>PHASES</b>	<b>Start</b>	<b>End</b>
RFA.....	197912.....	198812
CS.....	197912.....	198812
RFI/CMS.....	198812.....	200007
CMI.....	200412.....	200412
<b>LTM .....</b>	<b>200412.....</b>	<b>203508</b>
<b>RC: 200412</b>		

# TEAD-07, SWMU 17 TRANSFORMER STORAGE

## SITE DESCRIPTION

This five acre unpaved storage lot was used for the storage of PCB transformers and capacitors. A ROD was signed at this site in 1994 requiring no further action. The first five year review indicates that under Utah's current risk rule, residual contamination (SVOCs) remaining on site pose a risk to hypothetical future residents. The reasonably anticipated future use of the site is industrial. Corrective action taken as a result of the five year review resulted in the implementation of Land Use Controls in the form of deed restrictions. Deed restrictions have been placed on the property to prevent future residential development of the site. A Remedial Design Plan for implementation and monitoring of LUCs has been prepared. Future five year reviews will be required to ensure that the restrictions remain protective.

## STATUS

**RRSE:** Low

**REGULATION:** CERCLA

**CONTAMINANTS:** SVOCs

**MEDIA OF CONCERN:** Soil

<b>PHASES</b>	<b>Start</b>	<b>End</b>
PA .....	197912 .....	198812
SI .....	197912 .....	198812
RI .....	198708 .....	199404
RA .....	200502 .....	200502
<b>LTM .....</b>	<b>200502 .....</b>	<b>203502</b>

**RC: 200502**

## CLEANUP STRATEGY

LTM consists of five year reviews and annual LUC inspections.

# TEAD-20, SWMU 26 DRMO STORAGE YARD

## SITE DESCRIPTION

The DRMO Storage Yard was a 66-acre area that was used for the temporary storage and subsequent disposal of military commodities. The site is located in the northeast section of the former Tooele Army Depot industrial area. The site is flat and unpaved, with fencing around the perimeter. Investigations were conducted to determine if these storage activities resulted in the release of contaminants to the environment. Metals were detected at levels below risk based standards for industrial use. Residual contaminants remain on the site that present an unacceptable risk to hypothetical future residents. The reasonably anticipated future use of the site is for industrial use. Corrective measures implemented at the site consist of Land Use Controls (LUCs) in the form of deed restrictions. Deed restrictions have been place on the site to prevent future residential use and development. Site management and post closure monitoring will be required under TEADs RCRA Post Closure Monitoring and Corrective Action Permit to ensure that the implemented corrective measures remain protective.

## CLEANUP STRATEGY

LTM will consist of semi-annual LUC inspections.

## STATUS

**RRSE:** Medium  
**REGULATION:** RCRA  
**CONTAMINANTS:** Metals  
**MEDIA OF CONCERN:** Soil

<b>PHASES</b>	<b>Start</b>	<b>End</b>
RFA.....	197912.....	198812
CS.....	197912.....	198812
RFI/CMS.....	198812.....	200007
CMI.....	200412.....	200412
<b>LTM.....</b>	<b>200412.....</b>	<b>203508</b>
<b>RC: 200412</b>		

# TEAD-23, SWMU 29 DRUM STORAGE AREA

## SITE DESCRIPTION

The Drum Storage Area was used to store empty drums. Drums were reportedly stored upside down to allow residual material to drain. The area is located in the southwest section of the former Tooele Army Depot industrial area. The site consists of two separate parcels. The northern parcel is a triangular shaped open unpaved area approximately 5 acres in size. The southern parcel consists of a 25 acre area covered in gravel and broken asphalt pavement. The southern parcel is surrounded by a perimeter fence.

Investigations have been conducted to determine if storage of drums on the site resulted in the release of contaminants to the environment. Contaminants on the site were detected at levels below risk based standards for industrial use. Residual contaminants remain on the site that pose an unacceptable risk to hypothetical future residents. The reasonably anticipated future use

of the site is industrial. Corrective measures implemented at the site consist of Land Use Controls (LUCs) in the form of deed restrictions. Deed restrictions have been place on the site to prevent future residential use and development. Site management and post closure monitoring will be required under TEADs RCRA Post Closure Monitoring and Corrective Action Permit to ensure that the implemented corrective measures remain protective.

## STATUS

**RRSE:** Low

**REGULATION:** RCRA

**CONTAMINANTS:** SVOCs

**MEDIA OF CONCERN:** Soil

<b>PHASES</b>	<b>Start</b>	<b>End</b>
RFA.....	197912 .....	198812
CS.....	197912 .....	198812
RFI/CMS.....	198812 .....	200007
CMI.....	200412 .....	200412
<b>LTM.....</b>	<b>200412 .....</b>	<b>203508</b>

**RC: 200412**

## CLEANUP STRATEGY

LTM will consist of semi-annual LUC inspections.

# TEAD-70A, SWMU 46 USED OIL DUMPSTERS

## SITE DESCRIPTION

The Used Oil Dumpsters were located at buildings 602, 611, and 619 in the former TEAD industrial area. The dumpsters were used for the collection of used oil from vehicle and equipment maintenance activities. The dumpsters were routinely emptied by a recycling contractor, and toe oil was taken off-site for disposal. Investigations were conducted to determine if these management practices resulted in the release of contaminants to the environment. At building 602, contaminants detected were below risk base standards for industrial workers and residential use. Total Petroleum Hydrocarbon (TPH) concentrations exceeded State of Utah Tier I screening levels. At building 611, contaminants detected were below risk based standards for industrial use. Residual contaminants remain on-site that pose an unacceptable risk for future hypothetical future residents. TPH concentrations at building 611 also exceed State of Utah screening levels. At building 619, contaminant concentrations detected were below risk based standards for industrial or residential use. TPH concentrations exceeded State of Utah Tier I screening levels. Corrective measures implemented at building 602 and 629 consisted of the excavation and off-site disposal of TPH contaminated soil. At building 611, the implemented corrective measures consisted of the excavation and off-site disposal of TPH contaminated soil, along with Land Use Controls (LUCs) in the form of deed restrictions. Deed restrictions have been place on the site to prevent future residential use and development. Site management and post closure monitoring will be required under TEADs RCRA Post Closure Monitoring and Corrective Action Permit to ensure that the implemented corrective measures remain protective.

## CLEANUP STRATEGY

LTM will consist of semi-annual LUC inspections.

## STATUS

**RRSE:** Low

**REGULATION:** RCRA

**CONTAMINANTS:** SVOCs

**MEDIA OF CONCERN:** Soil

<b>PHASES</b>	<b>Start</b>	<b>End</b>
RFA.....	197912.....	198812
CS.....	197912.....	198812
RFI/CMS.....	198812.....	200007
DES.....	200007.....	200107
CMI(C).....	200107.....	200412
<b>LTM .....</b>	<b>200412.....</b>	<b>203508</b>

**RC: 200412**

# TEAD-85, SWMU 49

## STORM (WATER)/INDUSTRIAL PIPING SYSTEM

### SITE DESCRIPTION

Prior to 1988, all industrial waste water and storm water originating in the former TEAD industrial area were discharged to a common collection system. Investigations were conducted at this site to determine if leakage from the system occurred impacting soil and ground water. Contaminants detected on the site, with the exception of one outfall, were below risk based standards for industrial use. Contaminants detected at the Avenue G outfall, exceed risk based standards for industrial use. Residual contaminants remain on the entire site that pose an unacceptable risk to future hypothetical residents. Corrective measures implemented at the site consisted of the excavation and off-site disposal of contaminated soil at the Avenue G outfall, along with Land Use Controls (LUCs) in the form of deed restrictions on the entire site. Deed restrictions have been placed on the site to prevent future residential use and development. Site management and post closure monitoring will be required under TEADs RCRA Post Closure Monitoring and Corrective Action Permit to ensure that the implemented corrective measures remain protective.

### STATUS

**RRSE:** Low  
**REGULATION:** RCRA  
**CONTAMINANTS:**  
 SVOCs, VOCs, Metals  
**MEDIA OF CONCERN:** Soil

PHASES	Start	End
RFA.....	197912	.....198812
CS.....	197912	.....198812
RFI/CMS.....	199505	.....200108
DES.....	200108	.....200108
CMI(C).....	200108	.....200412
LTM.....	200412	.....203508

**RC: 200412**

### CLEANUP STRATEGY

LTM will consist of semi-annual LUC inspections.

# TEAD-86, SWMU 50 COMPRESSOR CONDENSATE

## SITE DESCRIPTION

This site consists of two compressor condensate drains adjacent to buildings 613 and 619 located on the former TEAD industrial area. The drains were associated with large volume air compressors associated with vehicle and equipment manufacturing and rebuild. Investigations were conducted at both sites to determine if discharges to these drains had impacted soil and ground water. Contaminants detected on the site were detected at levels below risk based standards for industrial use. Residual contaminants remain on the site that pose an unacceptable risk to hypothetical future residents. The anticipated future use of the site is industrial, therefore corrective measures implemented at the site consisted of Land Use Controls (LUCs) in the form of deed restrictions. Deed restrictions have been placed on the site to prevent future residential use and development. Site management and post closure monitoring will be required under TEADs RCRA Post Closure Monitoring and Corrective Action Permit to ensure that the implemented corrective measures remain protective.

## CLEANUP STRATEGY

LTM will consist of semi-annual LUC inspections.

## STATUS

**RRSE:** NE

**REGULATION:** RCRA

**CONTAMINANTS:**

SVOCs, VOCs, Metals

**MEDIA OF CONCERN:** Soil

<b>PHASES</b>	<b>Start</b>	<b>End</b>
RFA.....	197912 .....	198812
CS.....	197912 .....	198812
RFI/CMS.....	199505 .....	200106
CMI(C).....	200412 .....	200412
<b>LTM.....</b>	<b>200412 .....</b>	<b>203508</b>

**RC: 200412**

# TEAD-87, SWMU 51 CHROMIC ACID/ALODINE BEDS

## SITE DESCRIPTION

This site consists of four concrete pads located south of the former Consolidated Maintenance Facility. The site was used during the 1970s, for drying and de-watering of chromic acid and alodine wastes. It was reported that the pads were used later, in the early 1980s to drain and flush fluids from radiators and engines.

Investigations were conducted to determine if these activities had impacted soil and ground water at the site. Contaminants detected on the site were detected at levels below risk based standards for industrial use.

Residual contaminants remain on the site that present an unacceptable risk to future hypothetical future residents. The reasonably anticipated future use of the site is industrial, therefore corrective measures implemented at the site consisted of Land Use Controls in the form of deed restrictions. Deed restrictions have been placed on the site to prevent future residential use and development.

Site management and post closure monitoring will be required under TEADs RCRA Post Closure Monitoring and Corrective Action Permit to ensure that the implemented corrective measures remain protective.

## CLEANUP STRATEGY

LTM will consist of semi-annual LUC inspections.

## STATUS

**RRSE:** Medium

**REGULATION:** RCRA

**CONTAMINANTS:** Metals

**MEDIA OF CONCERN:** Soil

<b>PHASES</b>	<b>Start</b>	<b>End</b>
RFA.....	197912 .....	198812
CS.....	197912 .....	198812
RFI/CMS.....	199505 .....	200106
CMI(C).....	200412 .....	200412
<b>LTM .....</b>	<b>200412 .....</b>	<b>203508</b>

**RC: 200412**



# TEAD-88, SWMU 52B

## DRAIN FIELD/DISPOSAL TRENCH

### SITE DESCRIPTION

This site is located in the former TEAD administration area. The site consists of a long mounded trench, approximately 150 feet x 40 feet, and several smaller burial areas. Pieces of construction rubble and debris are present at the surface of the site and are buried throughout the area. Investigation of the site was conducted to determine if materials disposed of at the site had resulted in the contamination of soils. Contaminants detected on the site were detected at levels above risk based standards for future residents. The planned future use of the site is residential. Corrective measures implemented at the site consist of Land Use (LUCs) in the form of deed restrictions. Deed restrictions have been placed on the site to prevent excavation of subsurface soils at the site. Site management and post closure monitoring will be required under TEADs RCRA Post Closure Monitoring and Corrective Action Permit to ensure that the implemented corrective measures remain protective.

### CLEANUP STRATEGY

LTM consists of semi-annual LUC inspections.

### STATUS

**RRSE:** Low

**REGULATION:** RCRA

**CONTAMINANTS:** Metals

**MEDIA OF CONCERN:** Soil

<b>PHASES</b>	<b>Start</b>	<b>End</b>
RFA.....	197912.....	198812
CS.....	197912.....	198812
RFI/CMS.....	199505.....	200009
DES.....	200009.....	200112
CMI.....	200112.....	200412
<b>LTM.....</b>	<b>200412.....</b>	<b>203508</b>

**RC: 200412**

# TEAD-90, SWMU 54 SANDBLAST AREAS

## SITE DESCRIPTION

This site is located in the former TEAD industrial area. The site includes three buildings where sandblasting occurred. The buildings were building 604, Power Train and Special Equipment Branch; building 611, Military Standard Engine and Small Generator Overhaul; and building 637, a former Engine Rebuild Facility. Three types of sandblast media (i.e. steel grit, walnut shells, and glass bead) were used. The spent media was collected outside of the buildings in sealed hoppers. Investigations were conducted at each of the buildings to determine if these operations had resulted in the contamination of surrounding soil. Contaminants detected at building 604 were below risk based standards for both industrial and residential receptors. Contaminants detected at building 611 exceeded risk based standards for both industrial and residential receptors. Contaminants at building 637 were below risk based standards for industrial use, but exceeded the standards for residential use. Corrective measures were not required at building 604. Corrective measures implemented at building 611 consisted of the excavation and off-site disposal of contaminated soil, along with Land Use Controls (LUCs) in the form of deed restrictions. Corrective measures implemented at building 637 consisted of LUCs in the form of deed restrictions. Deed restrictions applied to the site are intended to prevent residential use and development of the site. Site management and post closure monitoring will be required in accordance with TEADs RCRA Post Closure Monitoring and Corrective Action Permit to ensure that the implemented corrective measures remain protective.

## CLEANUP STRATEGY

LTM consists of semi-annual LUC inspections.

## STATUS

**RRSE:** Medium

**REGULATION:** RCRA

**CONTAMINANTS:** Metals

**MEDIA OF CONCERN:** Soil

PHASES	Start	End
RFA.....	197912	198812
CS.....	197912	198812
RFI/CMS.....	199505	200108
IRA.....	199805	199808
DES .....	200108	200202
CMI(C).....	200202	200412
LTM .....	200412	203508

**RC: 200412**

# TEAD-93 SWMU 56 GRAVEL PIT

## SITE DESCRIPTION

This site is located in the former TEAD industrial area. The site was used for the disposal of unidentified burned material. The site is a low-lying area, approximately 4 acres in size. The site is covered with residual piles of cobbles, vehicle components, and containers. Test pits were excavated and soil samples collected to determine if contaminants were released at the site, impacting surrounding soils. Contaminants on the site were detected at levels above risk based standards for future industrial and residential use. Corrective measures implemented at the site consist of the excavation and off-site disposal of contaminated soil (expected to be completed in summer 2006).

## CLEANUP STRATEGY

After the soil excavation is complete no further action is expected.

## STATUS

**RRSE:** Medium

**REGULATION:** RCRA

**CONTAMINANTS:** Metals

**MEDIA OF CONCERN:** Soil

<b>PHASES</b>	<b>Start</b>	<b>End</b>
RFA.....	197912 .....	198812
CS.....	197912 .....	198812
RFI .....	199505 .....	200108
DES .....	200108 .....	200202
<b>CMI.....</b>	<b>200202 .....</b>	<b>200606</b>
<b>RC expected: 200606</b>		

# TEAD-101 SWMU 58

## INDUST AREA GROUNDWATER SOURCES

### SITE DESCRIPTION

TEAD-101 is consists of a TCE contaminated groundwater plume, and several groundwater contaminant source areas located within the former TEAD industrial area. A portion of the plume extends beyond the former TEAD industrial area boundary and underlies adjacent private property parcels. In 1999 through 2001, a Phase I RCRA Facility Investigation was completed that included an on-site and off-site soil and groundwater investigation. The on-site investigation included a passive soil gas survey to identify potential source areas, and the installation of ground water monitoring wells to define the on-site nature and extend of ground water contamination. The off-site investigation included the installation of monitoring wells on private property adjacent to the former TEAD industrial area. These wells roughly defined the limits of the groundwater plume to approximately 5ug/l. A Phase II RCRA Facility Investigation is currently underway to further define source areas as well as the extent of groundwater contamination. In 2004, TEAD in association with the Tooele County Board of Health and Utah Division of Water Rights established a Ground Water Management Area which encompasses the off-site portion of the plume. Through this management area, access to and use of the groundwater is prohibited for domestic use.

### STATUS

**RRSE:** High  
**REGULATION:** RCRA  
**CONTAMINANTS:** VOCs  
**MEDIA OF CONCERN:**  
Soil, Groundwater

<b>PHASES</b>	<b>Start</b>	<b>End</b>
RFA.....	199605 .....	199803
RFI/CMS.....	199808 .....	200611
IRA.....	200308 .....	200405
<b>LTM.....</b>	<b>200611 .....</b>	<b>203508</b>

**RC expected: 200611**

### CLEANUP STRATEGY

The Phase II RCRA Facility investigation was initiated in 2004, and is expected to continue through 2006. Upon completion of the investigation, a risk assessment will be completed to identity potential receptor risks. Based on the results of the risk assessment, a Corrective Measures Study will be completed to evaluate and select corrective measures to be implemented at the site. It is assumed that groundwater monitoring will follow with no active remediation.

## NO FURTHER ACTION REQUIRED BRAC SITES

<b><u>AEDB-R#</u></b>	<b><u>SWMU</u></b>	<b><u>AEDB-R TITLE</u></b>
TEAD-08	18	RAD STORAGE, BUILDING 659
TEAD-19	9	RAD WASTE STORAGE
TEAD-22	28	90 DAY STORAGE YARD
TEAD-24	30	OLD INDUSTRIAL WASTE LAGOON (BRAC PARCEL)
TEAD-25	32	PCB SPILL SITE
TEAD-26	33	PCB STORAGE, BUILDING 659
TEAD-30	38	INDUSTRIAL WASTE WATER TREATMENT FACILITY
TEAD-32	39	SOLVENT RECOVERY FACILITY
TEAD-69	47	BOILER BLOW-DOWN
TEAD-82	44	TCE STORAGE TANK
TEAD-89	53	PCB STORAGE/SPILL SITE
TEAD-91	55	BATTERY SHOP, BUILDING 618
TEAD-94	57	SKEET RANGE
TEAD-95	--	UNDERGROUND STORAGE TANK SITES
TEAD-96	--	BUILDING 611 FIRING RANGE
TEAD-97	--	TRANSFORMER STORAGE FACILITY, BUILDING 659

## PAST MILESTONES

*Start Date of BRAC at Installation:* 2003

*Past Phase Completion Milestones:* None

*IAG/FFA Driven Milestones:* RCRA Corrective Action Permit/Federal Facilities Agreement

## PROJECTED MILESTONES

*Projected ROD/DD Approval Date:* 2006

*Projected Phase Completion Milestones:* 2006

*Projected construction complete and NPL Deletion Date:* 2006

*Estimated Completion Date of All RA(C) Activities:* 2006

*Estimated Completion Date of IRP at Installation (include LTM phase):* 2015+

# Tooele Army Depot BRAC Schedule

(Based on current funding)

SITE #	SITE NAME	PHASE	2006	2007	2008	2009	2010	2011+
TEAD-03	Transformer Storage Site	LTM						
TEAD-04	Sandblast Area	LTM						
TEAD-07	Transformer Storage	LTM						
TEAD-20	DRMO Storage Yard	LTM						
TEAD-23	Drum Storage Area	LTM						
TEAD-70A	Used Oil Dumpsters	LTM						
TEAD-85	Storm/Indust Piping System	LTM						
TEAD-86	Compressor Condensate	LTM						
TEAD-87	Chromic Acid/Alodine Beds	LTM						
TEAD-88	Drain Field/Disp Trench	LTM						
TEAD-90	Sandblast Area	LTM						
TEAD-93	Gravel Pit	CMI						
TEAD-101	Indust Area Groundwater Sources	RFI						
		CMI(O)						

**PRIOR YEAR FUNDING****TOTAL: \$ Unknown****CURRENT YEAR FUNDING**

FY05 \$2,555,000

**FUTURE YEAR FUNDING*****TOTAL FUTURE REQUIREMENTS:*** \$3,368,000***TOTAL BRAC PROGRAM COSTS:*** \$Unknown